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**CURRICULUM EVALUATION OF
NURSING EDUCATION
IN IRAN**

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**A thesis submitted for the Degree of
Doctor of Philosophy (Ph.D.)**

**Faculty of Arts
University of Glasgow**

1996

The work carried out and reported in this study are the sole responsibility of the author. Similarly, the interpretation of the data and the conclusions reached and recommendations are entirely her responsibility.

Mrs. Zohre Parsa Yekta

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7 March 1996

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ABSTRACT

The purpose of this thesis is to clarify different aspects of the nursing curriculum from lecturers' and students' points of view in Iran. The evaluation employed a **triangulation technique** in order to assess the strengths and weaknesses of the nursing programme and to provide explanations for its successes and failures. In addition, it attempts to find whether there was any relationship between the characteristics of the respondents and their evaluation of the curriculum.

The thesis begins with an introduction to the research. The general policy of The Ministry of Health in nursing education and also the main problems which the students and the teaching staff are confronted with, and the deficiencies of facilities are clarified as background to the research.

After describing the main features of the nursing curriculum, some critical issues in nursing education are reviewed. At first, investigations on the nursing curriculum in general are analysed and then nursing research on a particular course or a component of the nursing curriculum is described.

The conceptual framework of the research explores different concepts of curriculum and its evaluation.

Methodological issues and the findings of the research are also presented in detail. In order to make inferences about the characteristics of the lecturer and student populations from the characteristics of the samples

drawn from these populations, inferential statistics are applied. The most important findings of this study fall into three categories:

- The different **components** of the curriculum from viewpoints of the lecturers and students were:
 - **Goal:** ambiguous from the respondents' viewpoints;
 - **Content:** acceptable from the respondents' viewpoints;
 - **Methodology:** controversial. Lecturers were critical of the teaching methods. On the other hand, they were acceptable to the students;
 - **Evaluation:** controversial. Assessment approaches of the individuals was acceptable to the lecturers but not acceptable to the students;
- There was no common viewpoint among the respondents about the **nursing components** of the curriculum.
- None of the respondents' characteristics had a statistical significant relationship with their perceptions about evaluation of the nursing curriculum.

The thesis ends with some recommendations which are based on the findings of the research.

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PART ONE: INTRODUCTION TO THE RESEARCH

CHAPTER ONE: AIMS AND CONTEXT

"It would be hard to find an area of research more obviously relevant to education, or one that has been more obviously mishandled, than the curriculum."

(Wilson, 1972, p.104)

1.1 Aims of the Research: The focus of this research is the curriculum of nursing education in Iran. The word 'curriculum' is central to all educational endeavours though it has different perspectives in different contexts. Greaves (1987) described a number of such perspectives from a timetable of a teaching programme to an outline syllabus of a course or sometimes the blocks of subjects that are taught in an educational institution.

"The definitions available are usually in the form of extended conceptual analyses and some may be influenced by particular philosophical beliefs, psychological views, political and social ideals and values."

(Greaves, 1987, p.4)

Bevis (1982) put forward a very general definition of the curriculum. "The curriculum is the totality of learning activities that are designed to achieve specific educational goals" (p.8). Although she has noted the totality of the curriculum, it seems that this definition leaves many dimensions of the curriculum ambiguous.

Kerr (1968) took an inductive approach to the idea of curriculum and proposes a model that takes a synoptic view of the curriculum from observable data. The focus developed by Kerr is a holistic one. His view of curriculum concerns: "all of the learning which is planned and guided by the school, whether it is carried out in groups, or individually inside or outside the school" (p.16).

He identified four interrelated components of the curriculum as:

- curriculum objectives,
- knowledge,
- learning experiences,
- curriculum evaluation.

Such an approach is relevant to the curriculum in the context of educational courses for nurses. The last concept, curriculum evaluation, which is the focus of this study refers to the process or processes used to weigh the relative merits of those educational alternatives which are deemed to fall within the domain of curriculum practice.

Lawton (1983) defined evaluation as a complex and difficult process requiring expertise. From his viewpoint, decisions about efficiency, the purpose of education, teaching methods, as well as the means of collecting evidence and coming to conclusions about all these are involved in evaluation.

"Evaluation of the curriculum of a nursing education programme is more than mere evaluation of courses, students or faculty. Instead, it involves a complex set of principles related to the whole of the curriculum process and can be defined as the delineating, obtaining and providing of useful information and data for the making or judging of decision alternatives in relation to the totally organized and planned curriculum."

(Torres and Yura, 1986, p.117)

Quinn (1988) emphasized that the curriculum does not exist in isolation and reflects the changing nature of society and its emerging themes. A curriculum is not a static concept, rather it is a growing, dynamic creation that will need constant modification in the light of evaluation and new ideas and is thus never finished. The purpose of curriculum evaluation, as McNeill (1981) believed, is an attempt to clarify two issues:

"Do planned learning opportunities, programmes, courses, and activities as developed and organized actually produce desired results?

How can the curriculum offerings be improved?"

(McNeill, 1981, p.253)

The aims of this study are based on the following premises:

- Human beings are continuously interacting with the world because of their dynamic nature. As a result, educational development could be regarded as a process that demands a constant evaluation of educational programmes to establish their merits. As Yura (1986) stated "environmental effects upon the holistic nature of man will require continual curriculum adjustment to meet changing health needs" (p.68).
- According to Articles 3(3) and 30 of the Iran's Constitution of (1979), study in all levels is free for students. The Government allocates very significant resources to higher education in order to provide for the most able students to study without any economic constraints. For economic reasons, a national curriculum such as a nursing programme in Iran should be able to produce the highest number of the students in the shortest time and with the best performance. This means that the curriculum should be cost effective for the Government. Therefore, the curriculum must be evaluated and revised from time to time in order to

test the mentioned criteria.

- To guarantee achievement of a minimum level of knowledge for all students, all of the universities' curricula are national. That means educational planning is centralized. If the curriculum has important shortcomings, it would create a major problem. However, a judgement in this regard would be scientific only when it is based on research.
- As Burrell, Astbury and Mackay (1988) pointed out, "evaluation procedure becomes a routine part of the procedure of curriculum development. A curriculum will be completed when together with other necessary elements it has been evaluated" (p.168). In fact, evaluation plays an important role in the development of a curriculum.

The evaluation of the nursing curriculum is therefore necessary to clarify the deficiencies of the current curriculum in Iran. By identification of relative strengths and weaknesses a basis will be provided for further curriculum development. In this study these problems will be explored and an appropriate solution proposed. Administration of evaluation is also the fourth stage of curriculum planning (confer with Chapters Four and Five for more details), the carrying out of a such evaluation would meet the need in that regard. Evaluation of a curriculum can be conducted in different ways. The approach of this research has arisen from many sources including:

- conditions of the Nursing Education Programme in Iran,
- advantages and disadvantages of similar investigations in the literature.

The information has been obtained by a combination of different dimensions of the two main approaches of educational investigation, quantitative and qualitative approaches. This kind of data collection is called "triangulation". In the triangulation method, the research is established by different data sources, persons, places, times, methods,

instruments and so on.

- This research has utilized the opinions of the two main stakeholders of the nursing curriculum, the lecturers and the students. The lecturers are persons who are involved as producers, executives, and also direct observers of the programme. Stake (1967) believed that the students are a part of product of the curriculum and educational process. Hence, the viewpoints of the participants could be considered in order to establish the resources of information about the nursing curriculum.
- The respondents' points of view were attained by use of two instruments, a questionnaire and an interview. The lecturers and the students evaluated the curriculum by choosing one of the five provided options for different components of the curriculum in the questionnaires. The opinions of the head of different nursing departments about nursing courses are gained in depth by interview.
- Nursing faculties of capital and other provinces that had the last term students in June, 1993 formed the environment of the research. Therefore, a set of opinions about a national curriculum has been provided by participation of several nursing faculties of the country in the research.

The most important points that have been raised in this research are as follows:

- General policy of The Health Ministry for nursing education is described in Part One, Chapter One. Relationships of the Medical Science Universities and Nursing faculties, relationships of different faculties in the Medical Science Universities; the limits of power and

authority of nursing faculty, organizational chart of teaching staff, minimum degree of teaching staff, condition of recruitment of them, different courses that are offered, time table of teaching, proportion of theory and practice, assessment of the students are also considered. In this manner, the context of the research is clarified by identifying the main problems of nursing education relating to the students, teaching staff and facilities available to them.

Accordingly, other headings which are related to the research and are defined in this work include: statement of the problem and its significance, keywords definition, assumptions, limitations of the research and research questions which would be considered.

- In order to reveal what has been written about the topic and utilize the advantages of similar investigations, some critical issues in nursing education are reviewed in **Part Two**. At first, investigations on the nursing curriculum in general are criticised in Chapter Two and then nursing research on a particular course or a component of the nursing curriculum are described in Chapter Three.

- To establish some common notions about the different terms which have been used in this research and also to recognize those terms better, a conceptual framework of the research is explained in **Part Three**. In this regard Leddy and Pepper (1989) believed:

"An initial review of the literature is helpful in identifying the major variables in the area of interest, finding out what is already known, gathering feasibility data on the needs for investigation of that question, and refining the focus of the problem to be investigated."

(Leddy and Pepper, 1989, p.136)

Chapters Four and Five are therefore a set of viewpoints of authors in education and nursing. In light of the notions of the two concepts, curriculum and evaluation, standard use of them in the research is achievable. Concept of curriculum involves: history of curriculum, classification, definitions, its resources and components (aim, content, methodology, evaluation), curriculum planning groups, and finally models of curriculum planning. Concept of evaluation includes: history of evaluation in education, its definitions, characteristics of curriculum evaluation, its types, classification, levels, evaluator's role, and instrumentation of evaluation.

- Methodology of the research is discussed in detail in **Part Four**. The type of investigation, population, samples, research environment, variables, data gathering, criteria for assessing measuring tool are described in Chapter Six. Several stages from pilot study to final data collection are explained briefly in the Appendix A1.

- The results of the research are outlined in Chapter Seven (the lecturers' results) and Chapter Eight (the students' results) in **Part Five**. First, the characteristics of the lecturers and the students are shown by figures in Appendix A3. Second, the percentage scores of the respondents' viewpoint on nursing, life and social science courses related to nursing are indicated in Tables 7-1 to 7-4 and 8-1 to 8-12. The other obtained evaluation scores of the respondents by their characteristics are demonstrated in cross tabulations in Tables 7-5 to 7-23.

To analyse the data, central tendency and dispersion in terms of mean and standard deviation of different components of the curriculum and also each course are calculated. This information is concerned with the samples and therefore, inferential statistics are applied to discover

whether the data are valid in the population or not. The applied statistical tests are:

- the analysis of variances including: the F-Test and t-Test for quantitative data, the Kruskal-Wallis Test and the Kolmogorov-Smirnov Test for qualitative data;
- measurement of association including: Pearson-Product moment correlation for quantitative data, and the Tschuprow contingency coefficient for qualitative data.

• In Part Six at first, the questions and their answers are discussed in Chapter Nine. Next, in Chapter Ten, the results are summarised to find out if the answers of the research questions are obtained. Then, according to the data gained in undertaking the literature review and on the findings of the study, some recommendations in terms of graduate and undergraduate programmes are presented in Chapter Eleven. The graduate recommendations include the proposed plan that are focused on in-service education for graduated nurses. The aim of undergraduate recommendations is to reinforce the strengths and to eliminate the weaknesses of the existing nursing curriculum.

Finally, it should be noted that the overall purpose of this study was to enhance the nursing curriculum in Iran. It describes the strengths and weaknesses of the nursing programme from the lecturers' and students' viewpoints. In addition, it attempts to find whether there was any relationship between the characteristics of the respondents and their evaluation of the curriculum.

1.2 Nursing Education in Iran

1.21 Background: In 1985 the Iranian Parliament passed an Act

(No. 64840) which instigated the separation of medical sciences from the old universities. A new form of university was established exclusively concerned with medical science. Since that date, nursing faculties have functioned as an independent entity of equal status with other fields of medicine with their deans, staff bodies and budget.

The number of faculties in each medical university depends on the facilities and trained personnel which exist in that university. For example in the capital, Tehran, the facilities of the universities are more than those in the provinces. That has made them able to establish up to seven faculties in each of those Medical Science Universities. Meanwhile, some of provinces' Universities have less facilities and faculties. The faculties of a Medical Science University are: Dentistry, Health, Medicine, Nursing and Midwifery, Paramedics, Pharmacology, and Rehabilitation sciences. Several departments of each faculty offer different levels of education from a two-year grade (associate degree) to a Ph.D. degree and in some of them, post-doctoral work and even specialties in medicine. The faculties are self-governed and controlled but different departments cooperate to teach the courses of the university according to their staff specialties. For instance, the physiology courses of all faculties are taught by the lecturers of the Faculty of Medicine and/or pharmacology course of all faculties are taught by the lecturers of the Faculty of Pharmacology.

All Nursing faculties have six departments: Health nursing, Mother and Child Health nursing, Medical-Surgical nursing, nursing Management, Paediatric nursing and finally Psychiatric nursing. Until ten years ago Midwifery was a specialization of nursing and those who wished to work in the labor and obstetrics wards had to study it for two years after a minimum of three years nursing experience. Now, Midwifery is a separate profession in Iran and Midwifery students study in the same faculty as the nursing students.

In Iran, medical services are provided by both public and private sectors. However, health and medical education is only offered by the public sector. Despite a shortage of nurses in both sectors, employment requirements are different. One of the differences is in the grade of nurses employed. Although the preferences of the private sector for nurse employment are the obedient nurses with minimum cost (cheap wage, good primary care), but they employ highly qualified nurses for specialized wards (e.g. Coronary Care Units, Intensive Care Units, Dialysis). The nurses with low qualification or nursing students (as licensed practical nurse) are employed to work in general wards. Indeed there are enough jobs for every graduate nurse and student nurse. Therefore, there is no competition between graduate nurses for jobs and no impetus between nursing students to increase the quality of their study.

1.22 Teaching staff of nursing faculties: The teaching staff of each department are organized according to their educational majors and fields of work. All nurse teachers are responsible for teaching in class and also instructing in the clinical situation. Lecturers who have administrative responsibility (such as: head of department, educational deputy, dean of faculty) in addition to teaching, are exempted from clinical instruction. Therefore, where the term "lecturer" or "nurse teacher" appears in the text, these are intended to include both responsibilities. Because of the huge number of students in recent years, temporary teaching staff are used in addition to permanent staff, especially for mentorship at wards. In fact, the ratio of nurse teachers to students is very low (in some instances, more than twenty students are supervised in four or five wards by a teacher). There are efforts to improve it to an optimum level by using temporary staff in short time or to increase recruitment of new post-graduate candidates.

The nursing subjects are usually taught by nurse instructors who normally hold an M.Sc. degree. A limited number of the B.Sc. degree educators instruct nursing students in clinical areas as tutors.

The life science courses are taught by the teaching staff of other faculties of the Medical Science Universities. They are specialists in their field of study and usually work in their departments as a member of the team. Always the head of departments who are responsible for teaching the life science courses of the nursing curriculum, notify different parts of the syllabus to the related lecturers. While these lecturers are informed about syllabuses of those courses they teach on they may not have information on the whole of the nursing programme.

1.23 Entrance to nursing: According to the constitutional law of Iran, students do not pay for tuition in universities because all education is free. Nursing students are high school graduates (twelve years of education, eight years of which are general and the last four years are more specialist). They are admitted to the nursing education programme through a national system of entrance examination for all high schools graduates. Students are assigned to the faculties of nursing by a computerized system on the basis of the examination marks and expressed preferences.

There is great competition to enter higher education programmes, and students are eager to be admitted to any course. For example in the academic year 1994-95 that had 18,200,000 pupils, there were more than 1,250,000 participants in the national entrance examination, but the number of places in universities was about one tenth of them (Kayhan Havai,1994).

This system of selection of students for nursing means that student nurses are not interviewed before entering the programme and may not

be interested in nursing, as it is not always their first choice. This results in drop-out from the programme or transmission of passed units to the other accepted majors. In spite of a high rate of expenditure for higher education by the Government, wastage of uninterested nurse is common later from the profession itself. Unfortunately many of the documents have been destroyed in effect of revolution or war in recent years and therefore, there are not an exact statistics on the wastage of nursing students and graduated nurse recently.

1.24 The course of B.Sc. in Nursing Studies: This course of study lasts four academic years. It consists of eight semesters of theoretical and laboratory-clinical instruction. From the second semester, nursing students have clinical experience in different fields e.g. wards, clinics, health centres, ambulance service, etc. The practice is organized and supervised by staff of the Nursing Faculty. It is part of the educational programme and is a period of integration of the theoretical and practical knowledge gained during the course.

There are moves in some nursing faculties and also among medical managers (especially medical doctors) to use the students' services in order to decrease the nursing staff deficiency. They would like to influence the nursing authorities to change the current four-year programme to a three-year programme study along apprenticeship and followed by a one-year internship.

1.25 The educational programme: The educational component of the Nursing programme is organized centrally by the Ministry of Health. The Ministry has issued a basic programme for nursing which state minimum requirements. Then a special Programme Committee composed of head of departments of most experienced faculties (usually those nursing faculties which are located in the capital, Tehran) develop their own programme and send an official notice to the nursing faculties.

Each head of department in different faculties is responsible for the way in which it is implemented. General guidelines of national curriculum of nursing include: syllabus of each courses, time tables, textbooks, prerequisites courses, academic calendar and so on.

1.26 The students' assessment: The students are assessed by examination for theoretical courses and by observation of their practical performance both during and at the end of the course. Submission of papers is also an important part of the nursing students' assessment. Students are not allowed a second attempt at the examination. If they fail they must retake the course. They are requested to pass both the theoretical and practical sections. At the end of completion of all the theoretical and practical units, they should pass in the final mandatory examination. These examinations are regarded as certification of graduation and also commencing of profession.

1.27 Structure of the courses: There are three groups of courses in the nursing curriculum. All the nursing and some of the life science courses are organized in theoretical, practical and laboratory units. Every nursing student has to pass 146 compulsory units. Each theoretical unit is 17 hours, each laboratory unit is $17 * 2 = 34$ hours and each practical unit is $17 * 4 = 68$ hours. Theoretical instruction (1870 hours) occupies 47%, laboratory (340 hours) 8%, and field practice (1768 hours) 44%, of the total teaching time. (It is suggested that each internship unit will be based on $17 * 6 = 102$ hours, but this programme has not yet been ratified).

- The first group of courses are nursing courses. The number of these courses are seventy seven and are divided into six major fields of nursing comprising: Health nursing, Mother and Child Health nursing, Medical-Surgical nursing, nursing Management, Paediatric nursing and

finally Psychiatric nursing as follow:

Table 1.1: Hours allocated to the different kinds of teaching time of the Nursing courses of the curriculum

Nursing courses	Theory	Laboratory	Apprenticeship	Total
Health Nursing	102	-	136	238
Medical-Surgical Nursing	459	68	1020	1547
Mother&Child Health Nursing	85	-	204	289
Management Nursing	51	-	136	187
Paediatric Nursing	68	-	136	204
Psychiatric Nursing	68	-	136	204
Total	833	68	1768	2669

Among the seventy seven nursing units, forty nine of them are theoretical (49 * 17 = 833 hours), two of them are laboratory (2 * 34 = 68 hours) and twenty six of them are practice in the wards, health centres, clinics, ambulance service, etc. (26 * 68 = 1768 hours). In fact, nursing courses of the curriculum have 2669 hours which is 66% of the curriculum. Clinical contacts of the students to clients is 44% of the total teaching time.

- The second group of courses of the nursing curriculum is the units which are the life science and social science courses related to nursing. That means they form the basis and sometimes prerequisites of the nursing courses with forty six units. They are as follow: Anatomy, Applied Sociology, Biology, Biophysic, Chemistry and Biochemistry, Educational Technology, Epidemiology, Growth and Development, History of nursing, Lesson Planning and Teaching Practice, Microbiology, Nursing Ethics and History of nursing, Nutrition (regular

and therapeutic), Parasitology accompanied by Fungiology, Pathology, Pharmacology, Physiology, Psychology, Statistics. Among these courses eight units are laboratory ($8 * 34 = 272$ hours) and thirty eight are theoretical ($38 * 17 = 646$ hours), that means 918 hours related to the life science and social science courses related to nursing which is 23% of the total teaching time.

- The last group of courses in the nursing curriculum are referred to as interpersonal skills courses which are organized in twenty three units. They are common in all universities and all students are requested to take them. General courses are 374 hours as follows: Physical exercise, Islamic Ethics and Education, Foreign language usually English, Persian Literature, Islamic insight, History of Islam, Islamic Revolution and its roots. Therefore, 11% of the total teaching time is allocated to the general courses.

1.3 Further education of nurses in Iran: Nursing education in Iran has been offered at the Baccalaureate and Master degree. Since October 1994 the Doctoral degree programme has been ratified. According to the law, in addition to the Doctoral in nursing science the nurses can study Ph.D. in basic science of medicine (anatomy, physiology, epidemiology, etc.). This can be interpreted as progress in the status of the nurses, but at the other hand it can lead to the loss of high level educated nurses to other professions, to the detriment of the nursing service.

There are some part-time courses in specialist clinical nursing that lead to a certificate of attendance issued by the responsible authorities. The majority of these courses are: Intensive Care in Coronary Unit (C.C.U.), nursing in Intensive Care Unit (I.C.U.), Dialysis nursing, etc.

1.4 Major problems of nursing education in Iran: After the

establishment of the Medical Science Universities in 1986, because of a very high rate of population growth in first years of 1980s (3.9% in 1985, Iran Statistics Centre) and the involvement of the country in an imposed eight-year war, the Health Ministry decided to increase the number of trained man power in the health care system. However, the organization of teaching and secretarial staffs of faculties were only marginally changed despite the admittance of more than three times and in some institutions ten times the number of students. For example, in Tehran Nursing Faculty which is the biggest and the most ancient nursing faculty in Iran, a group of 300 students are admitted twice in each academic year, October and January, whereas previously, only 50 nursing students were admitted once in the academic year in October.

This growth in the student numbers has led to some problems not only in the nursing but also for all branches of medicine and related fields. There was less accommodation in wards for the students of different majors of medicine than previously when the faculties of the Medical Science Universities had less students. Despite difficulties many students were educated in a short time but, maybe the most important reason for the problems in nursing education is related to this discoordinated but inevitable growth. The education of professional nurses in the general system of education and at the higher level presents some problems which will be categorized as follows:

1.41 Problems related to the students: Students entering the nursing programme are of a high intellectual calibre, although not all students are highly motivated towards nursing. The existing curriculum is planned to produce a nurse responsible for general care, able to work in hospital with a greater degree of independence than previously. Unfortunately many doctors have still some misconceptions about nursing and its duties. Many of the doctors prefer to work with a nurse who lacks

initiative and who only obey their prescriptions. However students are taught to care for the patients according to the scientific principles and fundamentals of nursing. This problem is less in specialty wards which the students have more independence. An additional problem for students applying the knowledge acquired on the programme is that, there are some resistances in nursing staff of hospitals against new model and approaches of care. Usually they have not had any refresher's course recently, or they are bounded to traditional system of patient care.

The nursing students therefore, confront a different world of care against what has been pictured at faculties. They have a high capacity for learning though many may lose or lack motivation. After a lapse of time and particularly apprenticeship in general wards, the nursing student may feel conflict with her/his role. Many of the students abandon nursing particularly the males and, even if they complete the study, many of them do not work as nurses.

There are not sound statistics of students' wastage in Iran, because of two social crisis in recent years, revolution and then an eight-year war, but the researcher has observed it herself in a wide range. This problem, the nursing students' wastage, is a common problem in nursing education of many countries (Braithwaite and Elzubeir and Stake, 1994; Mashaba and Mhlongo, 1995).

1.42 Problems related to the facilities: Overall, the educational facilities are not very good in many nursing faculties. Library resources are limited because the nursing bibliography in the Persian language is not very rich. English resources (textbooks and periodicals) also are not usable for many of the first year students because of their weaknesses in English language. The nursing magazines which are edited by the nursing faculties have a good quality but they usually

have some technical and financial problems for regular publishing. There are other health magazines which include topics on nursing. Dissertations of the M.Sc. students form a good source of information about nursing and research in nursing. Usually many of them are booked by the undergraduate and even postgraduate students because of their up-to-date content and use of Persian language which is convenient for them.

Although the library of the faculties can compensate for the deficiencies of the audio-visual devices or other shortages of educational resources, but insufficiency in the organization of the library is a source of imperceptible problem and is an important issue. Most of the libraries have not used a standard system of coding for books (for instance, Library Congress or another system of coding) or many of them are not computerized. In addition there are not enough skillful librarians who could help the students to search. Deficit of the number of staff has led to the limitation of the working-hours in the libraries. Working-hours of many libraries are from eight o'clock in the morning until four o'clock in the afternoon, week-days. Therefore, the students and particularly the post-graduate students have little chance to use the resources when they wish. The mentioned problems are increasing when the faculty is large and have many references.

Deficiency in the audio-visual equipment is an important part of problems in the educational facilities. Usually the nurse teachers have to book devices such as overhead projector, video, etc. and therefore many of them prefer to teach without any help of audio-visual devices. However, the situation is steadily improving because financial obstacles are being eliminated.

Some years ago approximately at the commencement of the new system of the Medical Science Universities, a major problem for nursing

education arose concerning hospitals which were used as teaching hospitals. Many of them were unable to absorb the large number of students on clinical practice. Recently, the problem has been eliminated after the reconstruction of the management system in many non-teaching hospitals and they have been changed to teaching hospitals. Thus, those wards which were crowded with students of medicine and their different related fields are going to be suitable for clinical practice.

1.43 Problems related to the teaching staff: Nurses usually teach all nursing subjects, but other subjects are taught by specialists of other faculties of Medical Science University.

Since an M.Sc. degree is necessary for the lecturers, many nursing faculties were and some of them still are in crisis over the shortage of teaching staff. There is also a shortage of clinical instructors. Most staff nurses have not time or motivation to help the clinical instructors or are not trained and qualified enough to take on mentorship roles. This situation is a consequence of the following:

- There is a high rate of wastage in nursing personnel, because of hardship of nursing and lack of supplement wages for management or working at particular wards.
- Numerous nursing faculties in the country which have been established recently, have been looking for nursing educators. Therefore, the nurses may be motivated to study at higher levels (usually Master degree) and then be absorbed by the nursing faculties as educators. Meanwhile the others do not work for a long time except nurses who have graduated recently and have legal obligation to service after graduation because of their studying free of charge.

This leads to a very young set of staff nurses who have to accomplish their patient care duties exclusively and usually do not help the educators in wards. Hence, the clinical instructors must manage a lot of

students in different wards. They are adversely affected by the shortage of service staff and they have to do everything for the students. For this reason, patient assignment and the use of the nursing process which require cooperation of the nursing staff, occurs only in intensive and special care units where there is a higher proportion of graduate nurses.

1.44 Other problems: The other most common problems can be categorized as follow:

- **Lack of related laws:** Perhaps one of the greatest difficulties of health services in Iran that has not been yet resolved effectively, is a lack of regulation in medicine and nursing. There is no law listing clinical procedures that nurses may or may not undertake. Custom and practice usually dictate what tasks are performed by nurses. For example, while they accomplish many procedures according to a strong need for health care system, there is not a law which support the nurses who have theoretical knowledge and practical skills necessary to undertake procedures such as intravenous injection.

Recently, a list of procedures has been published by the authorities of the Health Ministry. This list has clarified the procedures that each level of nursing personnel could do. But the issues are very ambiguous and also it has not been ratified by legal authorities. Many students feel frustrated at the discrepancy between theory and practice. They are taught to give comprehensive and holistic nursing care but are unable to put this into practice.

- **Problems in presentation of Primary Health Care:** There is a gap between health centres as the first level of primary health service and the hospitals as the third level of those services i.e. referring system is not completely performed. Students are taught about primary health care, but the nursing service is not prominent in this system and they do not see it

practicable.

- **Continuing education:** Although continuing education for all personnel in the health care system is regulated by the law (Act 10479, 1990) programmes are not organized in most hospitals and other health services effectively with the exception of medicine. In several teaching hospitals, a nurse, usually the educational supervisor is responsible for both orientation programmes and in-service education. However, the nurse's license is for life and the right to practice does not depend on continuing education, so many nursing staff do not take it seriously.

1.5 Introduction to the research

1.51 Statement of the problem: The term "curriculum", as Quinn (1988) pointed out is a Latin word meaning running, race, lap, or course and it is the last meaning that is closest to the accepted use of the word in education, i.e. as applied to course of study.

Tyler (1949) was one of the most influential of the early curriculum theorists and arguably developed a considerable and lasting influence on present day thinking about the nature and function of the curriculum. He viewed curriculum objectively and in terms of its function and clearly included teaching and learning as integral parts of it.

A similar approach was developed by Taba (1962). She saw curriculum as a design of educational activities, rationally planned and calculated to do certain things. These were to diagnose needs, formulate objectives, select learning experiences and organize those experiences. They involved the determining of what to evaluate and ways and means of evaluating.

The earlier thoughts of Wheeler (1967) on curriculum problems was impressed by Taba's approach. Wheeler developed a systematic and

rational approach to curriculum development and evaluation which is offered as a process. He believed that the stages were related and interdependent, and combined to form a cyclical process so that over time the final phase affects the initial one. The process is modelled as five distinctive but interrelated stages, each one influencing the other in a dynamic and on-going fashion increasingly interest focused on evaluation role within the curriculum.

"In 1967, Scriven first differentiated two roles for educational evaluation: summative and formative. The former evaluates the effectiveness of a programme in terms of the end product, in this case, the graduate. Summative evaluations that compare two curricula assume that the programmes remain basically unchanged during the data collection period. Formative evaluation provides for periodic data collection and feedback about segments of the curriculum or curriculum materials. It is used for ongoing evaluation and minor improvements that do not affect the integrity of the curriculum design."

(White, 1983, p.167)

Evaluation contrasted by Greaves (1987) as formal or informal or a combination of both. The formal approach tends to be rather rigid and seeks a high level of reliability and validity. The informal approach is more flexible and subjective and tries to throw light on the working of the curriculum as a whole. The best known approaches to evaluation can be classified generally as follows:

- Case particular,
- Generalization approach,
- Product evaluation,
- Process evaluation,
- Pre-ordinate,

- Holistic,
- Analytic,
- Internal, or External.

Curriculum evaluation has been described by Nisbet (1974) as an extension of educational research, sharing its roots and using its methods and skills.

1.52 Significance of the problem: Quinn (1980) stated:

"Why we need to develop the curriculum? First, the field of nursing and medicine is undergoing rapid changes as a result of new technology, and knowledge is increasing at a tremendous rate. The curriculum needs constant review in order to keep up with this increase if it is to provide a realistic education for the learners. Secondly, there is the development of new methods of assessment and teaching in education, which need to be examined and tested in nursing curricula."

(Quinn, 1980, p.95)

Evaluation in nursing education as Gallego (1983) believed lags behind developments in general education. Therefore, every development in general education should be noted, because it may have relevance for nursing education.

"Without evaluation it is difficult to identify the cause of a problem and eradicate it. It is also highly improbable that real standards will be assessed or that a critical appraisal of the relative merits of the units of study will be made."

(Luff, 1980, p.30)

Evaluation is a type of applied research whose main function is to form value judgments regarding programme operation. It provides a basis for

revisions, modifications, and reorganization. Some of the changes that have been initiated as a result of the evaluation plan and are noted by Wakim (1983) include eliminating the position of curriculum coordinator, reducing the number of committees in the nursing department, beginning a nursing taxonomy for use in the curriculum framework, changing course credit hours to reflect the nature of clinical teaching, initiating some new course, deleting a course that could be offered by another department.

The systematic evaluation of educational endeavours as White (1983) explained has become a way of life. No course outline is complete without a statement of methods for evaluating student achievement, no curriculum design is complete without a plan for evaluating its effectiveness.

Dmitryiev and Lerner (1990) believed "one important thing that should be considered is that the curriculum has five levels: a theoretical level, to do with its composition; the level of subject or discipline, to do with the general outline of the branch of activity (as it is represented in syllabuses and teaching manuals); and the resource material, to do with concrete items of information and learning activities. These three levels all form a part of the curriculum planning that is undertaken before the teaching process begins. The fourth level is the level of actual teaching: here the planned curriculum is modified in accordance with learning conditions and situations. The last level has to do with what students actually learn, with what becomes incorporated in their minds and personalities as a result of teaching. Comparisons between what is intended and what is accomplished are always important, both in research and in practice"(p.234).

Evaluation seen as a process in education makes use of

measurement techniques, and provides both quantitative and qualitative based judgement about either a process or a product. The curriculum evaluation has become a part of curriculum research. Kelly (1977) stated:

"In general, all evaluation procedures see all curriculum planning and approaches as hypotheses to be tested. The holistic view sees evaluation as part of a continuous programme of research and development, and recognizes that the curriculum is a dynamic and continuously evolving entity."

(Kelly, 1977, p.116)

1.53 Keywords definitions: (In the next chapter the curriculum and evaluation will be described in detail)

- **Curriculum:** Kerr (1968) identified:

"Curriculum is all the learning planned and guided by the school, whether carried out individually or in groups, inside or outside the school."

(Kerr, 1968, p.16)

- **Evaluation:** Dictionary of Education (1977) expressed:

"Value judgement on an observation, performance test, or indeed any data whether directly measured or inferred is interpreted as evaluation."

(Page and Thomas, 1977, p.126)

- **Nursing:** As Kalisch and Kalisch (1986) believed the word *nurse* evolved from the Latin word *nutricius* which means "nourishing".

Henderson (1960) elucidated one of the old definitions of nursing.

She said that nursing is to assist the individual, sick or well, in the performance of those activities contributing to health or its recovery (or to peaceful death) that she/he would perform unaided if she/he had the necessary strength, will or knowledge. And to do this in such a way as to help her/him gain independence as rapidly as possible.

Recently, a comprehensive definition of the nursing was presented by Murray and Zentner (1989).

"It is an art and science in which verbal, nonverbal, tangible and intangible health-related activities are systematically performed by a specially educated, licensed and compassionate person. The purpose of these activities is to promote, maintain, or restore biopsychosocial and spiritual health of the person, family and group, as well as to comfort, protect, or stabilize the same during life or in the face of death, and to aid in their recovery."

(Murray and Zentner, 1989, p.72)

- **Education:** Page and Thomas (1977) have cited the definition of education according to UNESCO.

"Education is organized and sustained instruction designed to communicate a combination of knowledge, skills and understanding valuable for all the activities of life."

(Page and Thomas, 1977, p.112)

- **B.Sc. Nursing Programme:** According to the different policy of governments, the nursing programmes are planned for different durations centrally or locally. If there is a national curriculum, all the nursing education organization have to carry out the prepared educational package. In the school-based educational planning, each organization

develop and accomplish its particular programme. In Iran a four-year centralized nursing programme located in a faculty of nursing leads to eligibility for registered nurse licensing.

1.54 Research Assumptions: The bases of this research have been established on the following assumptions:

- According to Quinn (1988), the curriculum in nursing does not exist in isolation. It reflects the changing nature of society and its emerging themes. A course may be very effectively conducted in both its content and teaching but it may no longer meet the needs for which it was designed, those needs may have changed.
- Professional desire of the nurse teacher to participate objectively in the evaluation of the course is noted by Kenworthy and Nicklin (1989). They stated that previous experience of nurse teacher will tell them that no course is educationally perfect and that constant modification and revision to structure, content and assessment is essential if a course is to be kept dynamic and responsive to students' needs.

1.55 Research Limitations: There are many sources of error in research some parts of them are unavoidable. The following can be limitations of evaluative research:

- Evaluation research as Polit and Hungler (1987) mentioned can be threatening to individuals.

"Even when the focus of an evaluation is on nontangible entity, such as a programme, procedure, policy, or the like, it is people who developed the entity and are implementing it. People tend to think that they, or their work, are being evaluated and may in some cases feel that their job or reputation is at stake."

(Polit and Hungler, 1987, p.161)

- One of the problems when open-ended questions are used in the interview is that of developing a satisfactory method of recording replies. Cohen and Manion (1980) considered:

"One way is to summarise responses in the course of the interview. This has the disadvantage of breaking the continuity of the interview and may result in bias because the interviewer may unconsciously emphasise responses that agree with his expectations and fail to note those that do not. It is sometimes possible to summarise an individual's responses at the end of the interview. Although this preserves the continuity of the interview, it is likely to induce greater bias because the delay may lead to the interviewer forgetting some of the details. It is these forgotten details that are most likely to be the ones that disagree with his own expectations."

(Cohen and Manion, 1980, p.254)

- Further limitation of this research as Kenworthy and Nicklin (1989) pointed out, is related to model of evaluation that depends upon the interests and values of observer. This may be a particular problem where the evaluator is also the course manager or tutor, for role conflict is likely to occur.
- The purposive sampling for the interviews creates a potential for selection bias. At sample selection in evaluative research, the researcher is faced with accounting for possible bias introduced in the selection process. One possible source of bias is self-selection.
- The most important source of bias is the right of freely participation of the respondents particularly when a mailed questionnaire is used. It can be concluded that just interested samples (with positive or negative viewpoints) return the questionnaire.

- The last and perhaps the most important limitation of this study is related to the quality of the items of the questionnaires. By necessity of the collection of many information about all components and courses of the curriculum and also avoidance of developing very long questionnaires led to the application of multiple issues in some items of the questionnaires. Therefore, there is no certainty as to which of the issues are being addressed by the respondents.

1.56 Research Questions: An evaluation research according to Borg and Gall (1989) can be stated in the form of questions, hypotheses, or objectives, although it is most common to state questions. This research accomplished to answer the following questions about the nursing curriculum of B.Sc. degree in Iran.

- What is the value of each component of the nursing courses of the curriculum from the lecturers' and the students' point of view. (value is quantified in terms of scores on a questionnaire)?
- What is the value of each component of the life and social science courses of the nursing curriculum from the students' point of view?
- Are there any associations between the lecturers' and the students' point of view in evaluating the different components of nursing, life and social science courses of the curriculum?
- Are there any associations between the respondents' (the lecturers and the students) characteristics and their views in evaluating the different parts of the nursing, life and social science courses of the curriculum? If there are, what are the levels of the strengths of those associations?

PART TWO: CRITICAL ISSUES IN NURSING EDUCATION

Several kinds of evaluative studies have already been carried out in the field of nursing education on the use of both main types of evaluation-**formative** (Payne, Jowett and Walton, 1991) and **summative** (Kapborg and Fischbein, 1991), and a combination of both type (O'Neill, 1986). There is also considerable variety of approach and of scale in such studies.

A review of the literature shows that most investigations of the nursing curriculum have been done on a part of the curriculum (Sherman and May, 1991), a course of nursing (Chamber, 1987; Watkins, 1991) or life and social science courses related to nursing (Dvorak, Brophy, Binder and Carlson, 1993) or a particular aspect of the curriculum, for example, purpose (Fitzpatrick, 1981; Hanson and Heims, 1992), content (Solon, Kilpatric and Hill, 1988; Selby and Riportella-Muller, Salmon and Legaut, 1991), methodology (Gott and O'Brien, 1982; Harvey, 1990; Burnard and Morrison, 1992; Cowman, 1995), evaluation (Ussery, 1979; Mares, 1990; Whiteley, 1992). Only a few studies are holistic (O'Neill, 1986; McCormick and James, 1993). Accordingly, in this section of thesis (Part Two) the literature review is divided into two chapters. The first concerns studies which have assessed the nursing curriculum generally and the second, Chapter Three, reviews the research that has been conducted on a course or some particular part of the nursing curriculum.

CHAPTER TWO: INVESTIGATIONS ON THE NURSING CURRICULUM IN GENERAL

"The research worker must build his research upon the knowledge accumulated by previous researchers, and a major goal of the review of the literature is to establish this foundation."

(Borg, 1963, p.326)

2.1 Introduction It could be stated that all educational programmes are somehow unique and they demand a particular evaluation approach. Holistic evaluations of nursing curricula are rarely accomplished because of the need for experienced research teams, limitation of financial sources, time restrictions, and other numerous difficulties that each inquiry may be confronted with. As a result, it is difficult to find study that could be used as a pattern for development of a nursing programme. In order to learn from the varied though limited research available, an attempt has been made to consider the few studies which have focused on comprehensive evaluation of the nursing curriculum in several countries. Therefore, the general investigations of the nursing curriculum in the U.K. will be discussed first, and then nursing research of the other countries will be analyzed.

2.2 The investigations in the U.K. The nursing programmes of the United Kingdom have been based in Schools of Nursing for approximately a century. Some schools of nursing conduct internal evaluations, but nothing appears to have been published. The only comprehensive research study of a curriculum in a school of nursing had been published by Gallego (1983). She evaluated in 1980 'the school'

which had changed the basis of its curriculum from a medical model to a nursing model.

Ten years previously, Dodd (1973) investigated the approach of the same school of nursing in a London teaching hospital in 1970. She determined in her study that the hospital used a medical model and that nurses could not solve their caring problems, and changed nursing programmes under this model. The instrument of Gallego's study was a questionnaire for the students and interview with the Director and two other colleagues. She also analysed the examination results as a measure of the performance of the school. Finally, a description was made of the development of the curriculum, the context of the school, its political and administrative organisation, the beliefs of the teachers involved, in an attempt to make explicit the institutional personality and how the teachers and students saw their role and the schemes that the participants used in their everyday interaction with the system.

Courses based on the medical model are usually compiled in a block system and regard each human being as a patient who needs special treatment for his/her illness. The content of such courses is not integrated and the courses are not arranged in sequence. In contrast, the nursing model in the curriculum regards the client as a totality. Nursing models are categorized according to the discipline or anthropology from which they were derived and most often are labeled developmental, systems, or interaction models (Fawcett, 1987). The change in the philosophy of nursing education effects:

- the content of the nursing curriculum,
- the organization and interrelationships of the courses,
- the timetable of teaching,
- the teaching methods,

- the evaluation strategies,
 - the quality of care which is adopted by nursing students.
- An extensive formative study of the early stages of **Project 2000**, which was published in five interim papers by Payne et al (1990, 1991a, 1991b, 1992a, 1992b), provided information about the programme and assisted the decision-makers involved in nurse education. The main aim of that research was to provide an opportunity to learn from the experience of the first round Districts as they took on the task of implementing **Project 2000** in late 1989 and early 1990. Although thirteen Demonstration Districts were first to implement **Project 2000**, the case study work was only undertaken in six sites. The research was concerned with the process of implementation rather than its outcomes.

The technique of that study was triangulation but, at the early stage of the study, it had not been fully utilized (refer to Chapter Five for more detail of triangulation technique). The main data collection for the study comprised a programme of interviews with key personnel involved in the courses which were being carried out at intervals throughout the implementation of the programme. The research consisted in the main of semi-structured one-to-one interviews with a variety of respondents.

- A Director/ Principal of Nurse Education;
- A course leader from each scheme;
- 31 staff in higher education;
- 50 senior service managers;
- 77 nurse teachers who had been involved in **Project 2000** planning and implementation.

Interviews with clinical staff and students were also conducted. The interviewees were asked about their involvement in planning and

delivering the course, their views on the process and their expectations of future progress. The nurse teachers who were interviewed, saw **Project 2000** as a timely improvement to nurse education and welcomed the challenge which it presented. They enumerated the initial problems of the Project as follows:

- severe lack of information about the course on all levels,
- lack of availability of student handbook in some cases,
- slow dissemination of timetables,
- commonly unresolved regulations and strategies for academic assessment until a very late stage.

They stated that the student intake for **Project 2000** was so large that teachers had to resort to "talk and chalk" method.

A questionnaire had been distributed to all students in the first intake of the six centres being studied. The questionnaire was returned by 317 students, representing a response rate of 72%. The replies assisted in the selection of a sample of students for interview and provided background information about the interviewees. A total of 77 students had been interviewed once and interviewed again at various stages of their course.

Many students were unprepared for, or unaware of, what was expected of them. Many had suggestions about how the structure could be improved which offer guidelines for future practice. The students had suggestions to make about restructuring the courses both in terms of the form the Common foundation should take and the optimum way of sequencing and coordinating material. All groups of interviewees highlighted the need for continuing developmental work to identify what the chief priorities for course content were, and to ensure that channels for effective communication and collaboration were established. The students were not on the whole satisfied with the balance between set

work and independent study and there was much angst and uncertainty. The students' comments showed the mismatch in expectation between the recipients and the providers.

Since the first series of the students in **Project 2000** graduated in October 1992, the researchers had a very limited time to carry out an extensive qualitative study and then to categorize and analyse the results of interviews and recommend an acceptable blueprint. They had to gather the relevant data as soon as possible and could not choose an appropriate (or indicative) sample of the educators. This could lead to some errors in the study and as they say, "Shortage of time meant that planning work had to be completed in the quickest and most expedient manner and this meant that full and detailed consultation with all staff was impossible" (1991a, p.2). As Green and Stone (1977) believed, formative or process evaluation reports how things are going during the programme. It provides feedback to modify, enhance, emphasize or de-emphasize the treatment being administered. This means that formative studies are allotted to the particular situations and are also unrepeatable. Therefore, the results of this research are somewhat limited and cannot be generalized.

2.3 The investigations in the other countries In Sweden, nursing education has been available since the middle of the 19th century but no systematic evaluation studies in nursing education were carried out until 1960s. In the 1970s, nursing education, nurses' professional proficiency, organization and realization of nursing education programmes became the target for evaluation. Two research studies in nursing education were undertaken by Kapborg and Fischbein (1991). The purpose of the first study was to evaluate students' attitudes and their experiences of nursing

education and how they reacted to nursing practice. The purpose of the second study was to evaluate the professional competence of the same individuals after four years of practice. The general aim of both studies was to investigate whether nurses think they have enough and the right kind of knowledge to manage their work as practising nurses. In 1984, a questionnaire was given to 634 nursing education students at the end of their studies. In addition to personal information the students were asked about their:

- financing of studies,
- different conditions in their preceding education.

From the students' point of view, the most positive evaluations were associated with the practical training and their practical tutors. In evaluating theoretical subjects, the students stated that the teaching consisted of too much nursing theory, and they wanted to hear more about anatomy, physiology, medicine and pharmacology.

After a period of four years, the nurses were again asked to comment on their education in relation to their present practical work situation. Some of the questions in the follow-up study were similar to the question in the first questionnaire. Leadership and clinical competence seemed problematic for the newly graduated nurses. They believed that their education was not enough to prepare them for such tasks.

If the knowledge of the students and their attitudes, which were supposed to be changed, were measured before starting in education, it would be possible to estimate the interaction of such factors. Unfortunately the report did not point out to the such measurements being taken. There were also no means of comparing different teachers and tutors with regard to educational influences. A major shortcoming

was the lack of information concerning the changes in student behaviour in reaction to educational influences while their social and individual experiences were unique. These studies are ambiguous in the points that they do not illustrate how many respondents had dropped-out in the second study. Considering the use of the same instrument for the second study, a four-year lapse of time could affect the reliability of the instrument, but the way the investigator resolved problems of reliability and validity of the instrument was not clarified. It also was not clear which scale had been used to measure the students' attitudes.

- In Finland, a study was done by Leino-Kilpi (1993) after reform of nursing education which emphasized the formulation of national curriculum objectives. The data were collected using a questionnaire, answered by Finnish graduating nursing students. The purpose of the study was to describe the nursing students' awareness and the use of curriculum objectives during their education. The sample consisted of the 1990 graduating classes of nurses at the nursing colleges in Finland. Respondents totalled 379 (83%) of the graduates. In addition to personal information (age and marital status at the beginning and at the end of their study) the students were requested about nursing experience in health care system prior to the nursing course.

The main conclusion was that criterion-oriented evaluation approach was not necessarily well established in Finnish nursing education. From the perspective of those students, only one-third of them were able to integrate the objectives. Another third of the students could not find relationships between the objectives of different courses. The level of awareness of students was found to be moderate. Students had other sources than the curriculum to achieve the objectives. They did not always use the curriculum objectives in their self-evaluation and about

half of them had put their own objectives for their action and learning.

The students were asked to evaluate the usefulness of the teachers' assessment. About half of them found it to have been mostly useful. They were also requested to evaluate the usefulness of objectives for themselves, that is 60% viewed them as convenient and for the rest, they were too demanding.

From the perspective of the students, the curriculum objectives tended to be used by about half of the teachers always in clinical evaluation and one-third of them used objectives in theoretical learning outcomes.

The report had five figures for three questions of the study, but it is not clear how many items had been asked in the questionnaire. In some figures, the number of the respondents was less than the sample and the reason of this contrast was not explained. In addition, the association of the obtained demographic data with the aim of the study was not clear. In fact, it seems that there is no logical reason to ask the students' marital status and the report had not used this data.

- On the other side of the Atlantic, the Faculty of the Michigan State University College of Nursing was motivated to change the nursing curriculum by changes in the area of health care delivery, professional nursing trends, and community expectations. Teaching staff of the nursing college initiated a major curriculum change which was implemented in the spring of 1978. The new curriculum was based upon a conceptual framework of stress-adaptation with clinical content integrated throughout.

The programme evaluation was viewed by the Faculty as an essential part of curriculum development. Faculty efforts were directed

at construction and implementation of the curriculum. Concerns raised by the Faculty during the year of curriculum development were related to a need for assuring that content of all the nursing specialties was being integrated, that societal and health care needs were being addressed throughout the curriculum and that omissions and overlaps of content were being detected. This programme of evaluation had three main foci:

- determination of internal consistency; intracurricular and implementation components of the model could provide data for evaluation of internal consistency.
- assurance that goals were achieved; goal achievement could be measured on the basis of elements of the outcome component.
- determination that the curriculum was consistent with external reality; external consistency could be demonstrated by the existence of agreement between curricular outcomes and societal realities.

The presented model of evaluation by the committee was not implemented until September 1984. The sponsors of this programme, Horan and Knight and McAtee and Westick (1984), believed that the model allowed for flexibility in regard to timing, frequency, and sequence of data collection and choice of sample and would discover the problems and weaknesses of the programme. Unfortunately the criteria that were offered for evaluation of the programme were too general and ambiguous. For example, it did not describe the instrument(s) that were used for data gathering. If the final report of the above mentioned model of evaluation was published the judgement could be more possible and the results could be assessed precisely. However, the unabridged report was not made available. Although the presented plan was specifically

designed to evaluate nursing curriculum of the Michigan State University, the programme was conceptual in nature and could be adapted to other nursing programmes.

- In several nursing schools the medical model of the nursing curriculum has been utilized for many years. The Department of Nursing at Fitchburg State College conducted major curriculum revisions in 1978 by adopting an integrated approach to nursing education. A curriculum grounded in nursing theory was substituted for the traditional 'medical model' nursing curriculum. With the new curriculum in place, a systematic evaluation plan needed to be developed. The purpose of the evaluation plan was to provide feedback regarding the merit of curricular activities in order to effect future planning and decision making. The evaluation plan which was accomplished by O'Neill (1986) had both summative and formative components.

The summative evaluation focused on follow-up studies of students who had participated in the programme. The graduates' attainment of the terminal programme objectives were assessed via two tools:

- the Graduate Questionnaire,
- the Employer Questionnaire.

The Graduate Questionnaire obtained feedback from graduates of the programme at three months and fifteen months intervals following licensure. The Employer Questionnaire derived feedback from professionals who were familiar with the graduates' performance in the clinical setting. Thus, these two tools, when viewed together, were considered to provide evidence of the overall effectiveness of the curriculum plan.

In designing a plan for formative evaluation, the structure and the function of four components (Philosophy, Conceptual Framework, Level

Objectives, and Course Objectives) were examined. The philosophy and conceptual framework were assessed by a check list which was developed to measure the first and second components with discrepancies being identified. For evaluation of the third component, level objectives, students were asked at the end of each of the four levels to evaluate their attainment of the objectives. A bank of questions was developed to test specific learnings. The last component, course objectives was evaluated by a form at the end of each nursing course. It asked standard questions regarding learning activities, textbooks, etc.

The clinical agency evaluation tool asked several questions about the teaching-learning environment and was completed by students and faculty at the end of each course on each agency where they practice.

The evaluation project ran for seven years and identified strengths and weaknesses of the new curriculum. For instance, students and faculty evaluation led to the discontinuance of some clinical agencies as unsuitable for student learning. They found that content was not appropriate in helping the student to meet certain objectives. Changes in objectives resulted as a consequence to discovering some objectives were not attained at the level they were placed. It became evident through evaluation that despite the assumptions to the contrary, students at the second semester of junior year did not have enough theoretical background or sufficient practice to meet the objective 'give evidence of an ethical framework that guides own practice'. As a result, the objective was changed to a more realistic statement.

The application of two approaches of evaluation together: the summative and formative approaches, varied questionnaires, and also different groups of stakeholders provided the data necessary to guide the decision making and monitoring the programme. This multiple

approach, looking at several aspects of the curriculum, could cover the deficiencies of the different methods that have been used.

- One of the ways that could help to evaluate curriculum efficiency is to study the competency of former students of the programme. Knowles, Strozier, Wilson, Bodo and Greene (1985) reported an 'Evaluation of a Baccalaureate Nursing Programme by Alumni and of Alumni by Their Supervisors'. The primary aim of the study was to obtain and interpret programme evaluation data from former students and their supervisors for possible modification of the programmes and to meet the accreditation requirements. A secondary aim was to assess the moderating effect of certain variables which may influence the process of evaluation.

The population of the study was defined as all former students of the baccalaureate nursing programme. To accommodate the primary aim of the study, the sample was divided into two groups:

- Group I graduated from a block curriculum,
- Group II graduated from a modified, integrated curriculum.

The investigators used two instruments which were helpful in facilitating the aims of the study:

- A questionnaire for the evaluation of a baccalaureate nursing programme by former students,
- A questionnaire for evaluation of former students by their supervisors.

The former students of group I received significantly higher ratings than those of group II. Only a very slight erosion of this finding was observed after limiting the comparison to former students who were employed at their present position for three years or less. These differences may be

more readily explained by the fact that graduates of group I were, as a whole, both older and more experienced than graduates of group II. Another concern was that, supervisors with advanced degrees might apply more rigorous standards in their evaluation of graduates than supervisors who were less well educated. This might lead to lower assessments of the baccalaureate programme by those supervisors. The data indicated that the higher the educational attainment of a supervisor, the more likely it was that they would confer high marks on the former students. This means that the better educated students may occupy the positions of greater responsibility than their less well educated counterparts.

Although one of the strengths of this investigation was the use of the two standardized questionnaires, both of the instruments had been developed more than ten years prior the research. In fact, effect of the time on the attitudes of the respondents should be considered. About half of the respondents from Group I returned their questionnaires. Therefore, the rest of the responses from Group I, could not be utilized and there were not enough documents for comparison. Among the population Group II who received questionnaires less than one-third of the questionnaires had been utilized. Hence, it could be hardly acceptable validity of the results for the population.

- Ziv and Ehrenfelde (1990) reported a study about "Student Evaluation of the School Programme". The main goal of the study was to identify students' satisfaction with their curriculum as part of the reviewing of the curriculum. An instrument was constructed, based on materials found in the literature and questions formulated by the faculty. After 110 nursing students answered the questionnaires, the questionnaires were analyzed using factor analysis, Pearson correlation, Cronbach alpha and ANOVA methods. These statistical calculation were carried out in order to

eliminate the unsuitable items, to reveal whether there were any relationships between the variables and also to compare the variances of the students' answers. Another section was content-analyzed for students' recommendations for curriculum improvements.

The report stated that the results indicated overall student satisfaction with the curriculum. However, students suggested some changes, the main recommendation being the enlargement of certain clinical experiences and strengthening of the integration of theory into the clinical field. They also suggested they would like to be exposed to more patients at a time, to practice complicated skills and procedures in special units and to have smaller clinical experience groups (a lower students-teacher ratio), consecutive days of clinical works and greater collaboration between the faculty and the departmental nursing staff. Some students suggested that they be considered a regular part of the nursing staff during their clinical affiliation. Among the positive aspects mentioned by students were:

- Interest in subject matter,
- Communication with the faculty,
- The school atmosphere and the school's granting a baccalaureate degree and preparing them for a practical profession.

The study did not clarify how to get validity and reliability of the instrument. It is also not clear whether the curricula are common in those nursing schools or not. If the researchers had used the test-retest technique to get reliability, the use of the results of pre-test in the other places and for another population might not be desirable. In addition, selection of the students among different educational semesters who had different personal background and different nursing experience does not

seem be matchable as homogeneous sample. The investigators also did not describe how the mentioned statistical tests were used to identify the students' satisfaction with the curriculum.

- The aim of an investigation undertaken in Spain by Tudanca et al. (1993) was to identify nursing skills and activities acquired by third-year nursing students while they were doing their Primary Care practicals in the Health Centres and to discover the level of satisfaction of the students after these practicals. Design of the study was descriptive, using a questionnaire on the level of satisfaction. The participants of the study were twenty-four third-year nursing students doing Primary Care practical during the teaching year 1991-2. Before their practical studies in the Health Centre, 50% or more of the students defined as unknown or little-known the following nursing skills:

- taking out ear-plugs,
- extraction of blood,
- respiratory physiotherapy,
- stitching.

After the nurses had finished the practicals, the items which reflected general satisfaction obtained positive percentages above 72%. The study concluded that nursing skills and activities which are specific to Primary Care were unknown to most nursing students before their period of practical work in a Health Centre. The same occurred with certain basic nursing skills and activities. Students were highly satisfied.

2.4 Summary: Nursing practice and education varies from country to country and the research conducted in each country also varies in that it attempts to solve the problems which existed in that country. These

inquiries can be categorized as following:

- **Aim of the studies** In some studies the aim was **measurement of satisfaction level** of the students about different dimensions of nursing curriculum (e.g.s Knowels et al, 1985; O'Neill, 1986; Ziv and Ehrenfeld, 1990; Kapborg and Fischbein, 1991; Leino-Kilpi, 1993; Tudanca, 1993). Among those inquiries that were focused on the **theoretical parts of the curriculum**, satisfaction of nursing students in studies of O'Neill (1986), Kapborg and Fischbein (1991) and Leino-Kilpi (1993) were not high. Among those investigations that were focused on the **practical nursing experience**, most of student nurses in studies of Ziv and Ehrenfeld (1990), Kapborg and Fischbein (1991), and Tudanca (1993) were satisfied. However, they stated that they needed more clinical practice. These findings are comparable with Clark's (1994) study on the effectiveness of the Medical education from the graduates' perception. Those respondents stated that their preclinical courses were predominantly "About right" and the teaching of skills was perceived by many of them to be deficient in their education.

In some investigations that were focused on nurse teachers (e.g. Payne et al, 1991) they stated **theoretical and practical problems** of nursing curriculum and suggested a number of solutions.

- **Content of the studies** These inquiries were based mainly on the opinions of **lecturers and students** as two main stakeholders of nursing curricula. Some of those studies were focused only on nursing students (e.g.s Kapborg and Fischbein, 1991; Leino-Kilpi, 1993; Tudanca, 1993) and some others were established on study of both students and teaching staff (e.g.s Gallego, 1983; Knowles et al, 1985; Payne et al, 1991).

- **Methodology of the studies** Some of them were **formative**. As it is the characteristic of all formative studies, they are allocated a

special period of time and cannot be repeated by another investigator (e.g. Payne et al, 1991). Others were **summative** studies (e.g. Whiteley, 1992), and a few of them used both formative and summative approaches (e.g. O'Neill, 1986). A number of the investigations were conducted by **qualitative** approaches: observation and interview (e.g. O'Neill, 1986; Payne et al, 1991) and the others were accomplished by **quantitative** approach, questionnaires (e.g. Knowles et al, 1985; Ziv and Ehrenfeld, 1990; Leino-Kilpi, 1993). Overall, the mentioned studies illustrate that in different situations and according to the nature of the problem(s) that nurse researcher might confront with, the appropriate technique of investigation has varied.

It seems that some of those studies have some weaknesses in the methodology (sampling, application of different approaches of decreasing errors in measurement, etc.) but, the deficiencies probably may be related to the lack of sufficient detail given by the researcher in reporting each study rather than the design of the research. Considering the similarities of the above mentioned inquiries with the existing research (evaluation of the whole of the nursing curriculum), some positive points are derived among those research. These issues could be coordinated with the aim of this study and also the problems that nursing education in Iran (described in the first chapter) is confronted. The results could be hardly comparable because there are a lot of differences among them. These variations are from differences in systems of education to research instruments, samples, methods, etc. Therefore, generalizations from findings cannot be made.

CHAPTER THREE: RESEARCH ON A PARTICULAR COURSE OR A COMPONENT OF THE NURSING CURRICULUM

3.1 Introduction In education, much attention has been focused on the content of the curriculum. However, there are some studies conducted on the other components of the nursing curriculum (egs goals, methodology and evaluation). In this chapter, the literature is reviewed according to different components of the curriculum. There are four major questions that each curriculum developer is faced with. The questions are:

- what is to be done?
- what subject matter is to be used?
- what methods and organization are to be employed?
- how are the results to be appraised?

The above questions are sources of four main elements of a curriculum: aims and objectives (or goal), content, learning experiences (or teaching methods), and evaluation. Therefore, the studies fall into the following categories. Firstly, investigations are reviewed that relate to the goal component and then, those of the content component, methodology and finally the evaluation components are explored.

3.2 Goal Related Studies: The aims of a nursing curriculum may vary in each educational setting. Some of them may focus on promotion of quality of care in sick people (e.g. nursing curricula which are established on the medical model of care). The others may attend the daily living activities and their effects on the maintenance of health (e.g. nursing

curricula which are established on the nursing models of care). Some nursing programmes are based on care of individuals. For the others, human beings and their relationships with environment (family, community, etc.) are important. This variation usually depends on many different factors which influence each nursing curriculum.

Unfortunately, little attention by educationalists (especially in nursing education) has focused on the aims of nursing curricula. Despite extensive literature search no research articles in this field have been identified.

3.3 Content Related Studies: Perhaps it can be stated that most of the curriculum studies are content related. In this chapter these enquiries are categorized in two sets.

The first set is about those studies that investigate current or desired core concepts of a particular course in nursing curriculum. As Bradshaw (1989) stated in many situations, even in a national curriculum, subjects which are taught in classrooms are different from what is taken into account by curriculum developers (differences of the official curriculum and the actual curriculum). Therefore, many of nurse educators who are interested in curriculum studies try to identify, compare and revise content of courses which are taught in nursing schools. Studies on family nursing course (Hanson and Heims, 1992); communication skills in different nursing courses (Clark and Tomlinson, 1989); and nursing research course (Dvorak et al, 1993) are discussed first. Then, research on ageing-related course of nursing curriculum is examined (Dyer and McCauley, 1985; Podnieks, Fliesser and Brunton, 1988; Solon et al, 1988; Watkins, 1991).

The second set of studies which are discussed in this chapter focuses

on evaluative studies on content of a particular nursing course. The studies of Chambers (1987) and McCormick and James (1993) investigate mental health courses.

Family Nursing Courses

- Care of individual clients is frequently the traditional focus of health care and nursing education. Recently, the family, as a unit of care, has received more attention in many countries. An extensive survey had been done by Hanson and Heims (1992) in order to describe core concepts and clinical skills related to family assessment and intervention. The rationale was that the obtained data would serve as an important guide for a nursing faculty to revise and update their curricula.

A nineteen-item survey instrument was designed by the investigators. It contained eight open-ended questions and the rest were closed. Face and content validity were established by consulting a jury of content experts and by reviewing the family nursing literature. This study provided a description of family nursing content and clinical experiences offered in baccalaureate and graduate programmes. The quantitative and qualitative findings of the research were described for both programmes.

All schools reported family nursing clinical experiences. Baccalaureate programmes emphasized hospital labor/delivery/newborn units, home health settings, and community health agencies. Graduate programmes focused more on community health agencies and ambulatory settings. Medical/surgical and acute care settings were least used.

Schools defined the 'family' broadly. Few schools used traditional blood, adoption, and marriage themes that still persist in legal, religious, and governmental arenas. In both programmes, baccalaureate and

graduate, maternal/child faculty most frequently taught family nursing and they were from specialty areas historically associated with maternal-child, community, or mental health nursing. In comparing the amount of family content taught, there were no regional differences. Some course titles focused on family nursing, and the textbooks and assessment instruments used were very eclectic. The faculties enumerated some general models/concepts/theories that were teaching. They were developmental theories (e.g.s Erickson, Piaget), chronic illness and disability, communication, stress/adaptation, international, general systems, and the nursing process. The majority of schools taught family development and transitions, families and chronic illness, and families with life-threatening illness.

In this report, the investigators stated that there were some limitations on the questionnaire and its format, but they have not identified what were the problems. An important fact had been ignored that although the selected technique of sampling was stratification, the rate of responded questionnaires varied in each region. In addition, there is not a clear description of how the researchers had established the reliability of the questionnaire nor is there an explanation of how they had categorized the open-ended questions. Although it seems that the findings and conclusion of this study are questionable, they indicated that there were many different trends among the nursing schools in family nursing education. This information provides direction to nursing curriculum developers to strengthen family nursing in their curricula.

Communication Skills

- The dramatic shift in emphasis in the philosophy (health rather than sickness) and practice of nursing (use of nursing process and assessment

of patients' needs and problems), highlighted the need for nurses to be skilled communicators. Many researchers in seeking an explanation for their findings, postulated a link between poor communication and the lack of appropriate communication skills teaching in nurse education programmes.

The Communication In Nurse Education (CINE) project was initiated in the Department of Nursing Studies, University of Manchester in 1980 and finished in 1986 under supervision of Clark and Tomlinson (1989). The project had three parts the last one of which was preparation of nurse tutors for communication skills teaching. The first and second parts were as follows:

- a survey of Directors of Nurse Education (DNEs) and nurse tutors in order to identify their perceptions of communication skills teaching.
- a curriculum development project aimed at evaluating the integration of a communication skills teaching programme into the first 18 months of basic nurse training.

The instrument used in the first part of study was a questionnaire which was mailed to all DNEs in the U.K. (except Scotland). The purpose of the survey was to establish the extent to which communication skills were being taught in schools, the extent to which teachers were prepared for communication skills teaching, and attitudes and beliefs about the place of such teaching in basic nurse education. The majority of respondents felt that it was very important that communication should be taught to student nurses. The tutors identified a lack of information on how to teach the subject, and the majority stated that it was a neglected area in courses for nurse teachers.

The second part of the project was a form of evaluation research

and involved a mix of methods encompassing both quantitative and qualitative approaches to data collection. A quasi-experimental design was used in an attempt to measure the impact of the CINE input by comparing groups of students who received the teaching with similar groups who did not. Four schools, two in the north of England and two in the south, were identified as 'experimental' schools with a sample of 166 students. Two further schools were identified with similar characteristics to the 'experimental' schools to act as a 'comparison' group. The problems identified included teaching overload, difficulties in negotiating curriculum changes, space shortages, lack of support from colleagues and superiors, and lack of confidence in integrating experiential teaching approaches into an existing programme.

It seems that the structure and design of this study in each part and each group of samples were appropriate for the aims. Methodology and results are described completely, but there are some ambiguous points. For example, despite not mentioning of Scotland in the initial survey, the researchers had reported that "In Scotland almost half the tutors who found themselves teaching this subject did not feel that they had had any preparation for such teaching. In the rest of Britain, 73% of the tutors had had some preparation" (Clark and Tomlinson, 1989). It is also not clear why in the second stage of the study the research was carried out just in England and the other countries which had been researched in the first stage were omitted. It could be hardly acceptable that a set of sensitive skills and behaviours, as complex as 'communication', could be evaluated by a simple rating scale. The issues of how the communication is taught and assessed was not considered in the study.

Alongside the development of human knowledge, many subjects and interpersonal skills are taught by nursing tutors without any previous

formal education. In addition, it was found that the teaching of those knowledge and skills may be adversely affected by the tutor's lack of confidence and experience in the related area. The exploration and development of demanded knowledge, skills and also attitudes of educators was seen as major requirements to promote the quality of teaching/learning process. The qualities of the teachers present a large field of study in nursing education.

Research Methodology Course

- One of the courses in some schools of nursing is research methodology. The goal, content, and outcomes of this course had been investigated by Dvorak et al (1993). What do nurse educators expect to achieve in an undergraduate research course? The survey was accomplished in order to identify the goals and objectives of faculty members in conceptualizing undergraduate research courses, placement of the research course in the programme, the course requirements, and demographic information about the school.

Two hundred schools of nursing were randomly selected, of whom 165 schools (83%) responded. From the data received, 146 (88%) offered a research course in the BSN programme; three offered elective courses. Sixteen schools did not offer such a course, but seven of these stated that research principles were integrated in the total curriculum. The responses to the question about goals or reasons for the research course fell into two classes:

- Cognitive aims expressed in four categories, i.e., critical thinking, research critique, problem solving/decision making, and theory/practice;
- Professional skills expressed in five categories, i.e., consumer of

research, research utilization, clinical judgement, value for research, and participation collaboration in research.

The report described the other results of the research in detail. For instance: the course requirements (12% no prerequisite, 84% statistics or nursing courses or both), time of teaching, assessment of the enrolled students (53% presentation of a critique of research, 16% a proposal or 26% both of them).

Perhaps one of the interesting results in this project is the high rate of the returned questionnaires (83%). Some of the responses were not completed, but the investigators did not clarify whether the incomplete sheets were eliminated from the analysis. So, there are some doubts about the validity and reliability of the survey's results.

The findings of this investigation present the experiences of institutions who offer a research course. Nursing education in a generic BSN degree does not directly prepare a nurse as a researcher. However, among those schools which presented the course formally (90%), the goals of majority of them in teaching a research class were multiple. None of the schools introduced research early in their curricula. This is largely consistent with the view that it is not necessary to offer a research course in B.Sc. nursing curriculum. However, research courses within a curriculum in postgraduate degrees in nursing was considered appropriate. Development of such courses may be benefited from the results of the above research. In addition, another use of Dvorak et al (1993) study is in aiding the development of different ways of organising teaching of research to undergraduates.

Mental Health Nursing

- A comprehensive curriculum evaluation process (formative evaluation)

was introduced on mental health nursing in a school of nursing by McCormick and James (1993). This was an integral part of a modular pattern area-based State Registered Nurse (SRN) curriculum involving:

- 40 teaching staff;
- Over 50 clinical areas in three major hospitals;
- 450 students at any time.

Every ward and department used was assessed for quantitative and qualitative learning experience, using a standardized 35-question interview schedule to obtain data. The main data were obtained from the ward sisters or nurses in charge. Most of the learners allocated to the ward at the time were also interviewed to ascertain whether their responses corroborated those of the ward sister and nurse in charge. There was general agreement in the finding with only minor differences in responses.

Teaching/learning intentions were agreed and communicated by statements of aims and learning objectives for both theory and practice. Theory in each module was tested by both multiple-choice objective tests and essay questions to give product evaluation. Process in each module was evaluated by analysis of questionnaire completed by each student and at the 'end of module' meeting.

Perhaps one of the best point of this formative investigation is the use of 'triangulation' method in different aspects. This technique provided a lot of useful information and therefore was applied in the study of nursing curriculum in Iran. Several kinds of triangulation which were used by McCormick and James (1993) included:

- Person (ward sisters, teaching staff and students),
- Method (quantitative and qualitative),
- Space (different wards in hospitals),

- Instrument (questionnaire and interview), etc.

- In Northern Ireland, performance of the psychiatric nursing programme and competency of the nurses in that programme had been studied. An illuminative evaluation approach was used to examine the curriculum for a post-basic psychiatric nursing course by Chambers (1987). The purpose of the course was to prepare psychiatric nurses to work independently with a specific group of patients.

The aim of the study was to gain a greater understanding of the activities surrounding the course, including those of the 'hidden curriculum', in order to explore the environment in which the teaching took place and to find out the things that might happen in the context. Hence, the method of illuminative evaluation seemed most appropriate. The data were collected from a variety of sources using a number of different techniques which included:

- Interviews;
- Group discussions;
- Course evaluation questionnaire;
- Classroom and clinical observation.

Individual interviews were informal and relatively unstructured, but some of the interviews were more focused than others. They took place in a variety of settings and their duration varied. Group discussions were informal and consisted of a discussion with course teachers and a summative evaluation discussion. The summative evaluation discussion took place at the end of the course. The course evaluation questionnaire consisted of twenty nine components/elements which reflected the main aspects of the training course including resources. Each component had just one bi-polar adjective: Extremely useful, or Extremely useless.

The classroom and clinical observation consisted of participant and non-participant observation. The situations observed were role-play workshops and lectures. The clinical observation was carried out in the assessment clinic, situated within the teaching unit and equipped with closed circuit television. The student assessment was obtained by researching over past records, as well as talking to course members and teachers. The investigator reported that as a result of the pleasant, happy learning environment, the relationship between course members and course teachers was excellent.

As Chambers (1987) described in order to promote the process of data collection the course teachers were always available for consultation. Consequently, the course members often sought advice on issues not related to patient care, so this informal approach was very demanding of teachers' time and energy.

According to Parlett and Hamilton (1981), although it is possible to collect data from numerous sources, each method has limitations. There is often an advantage in combining techniques and triangulation on issues from different directions methodologically. The findings of this research indicated the use of multi-method investigation is effective obtaining an understanding of a course based on individual experience of participants and teachers. These results justify the process of evaluation of nursing education by illuminative approach.

Ageing-related courses

• Improving living standards and solving many of the health problems of many countries has led to the development of new trends in nurse education such as present and future health care of the aged. Ageing and its special consequences have received more attention in the nursing

curriculum of the involved countries. Nurses and nursing education are being prepared to meet present and future health care of the aged. In addressing the educational needs of the nurses, the Education Subcommittee of the Registered Nurses' Association of Ontario (RNAO), Older Persons Project, was convened in March, 1986 by Podnieks et al (1988). The committee did a descriptive survey of gerontological nursing curriculum in schools of nursing in Ontario in order to collect and analyse the data about the educational preparation of students in caring for older clients. The questionnaire and letter were mailed to 31 community colleges and universities (84% response rate). This survey depended on self-report and on the analysis of both quantitative and qualitative data.

The data indicated that most programmes in Ontario favoured the integration of gerontological content into courses throughout the nursing programme. The most important flaw which was identified by some educators, was the inadequate control over the theory content, i.e. what would be taught and who would teach it. Another drawback was the lack of recording of the actual amount of course work and geriatric experience acquired by individual students. Both baccalaureate and diploma students were perceived to have low or medium interest in working in clinical settings with the elderly. All clinical settings identified on the questionnaire were utilized for some students in all programmes. The highest utilization rate was seen in chronic care units in general hospitals, community health nursing services, and rehabilitation units. Nursing homes, homes for the aged, and private residences were next in frequency. One-third of the programmes stated that they did not focus on gerontological concepts in a planned way but that individual faculty may stress this aspect in their contact with students.

Most of the faculty who held masters degrees were teaching gerontology in baccalaureate nursing programmes.

The respondents of this study in the institutions were not identified and their characters were not disclosed, i.e. it is not clear whether the lecturers or the directors of the nursing schools or the students have replied to the six general questions of the study. While the researcher had pointed out the qualitative and quantitative data of the study, the scale of the measuring tool of such open-ended questions was not described.

At present, one third of population in Iran are between 25 and 60 years old (Iran Statistical Yearbook, 1995). It means that in future the number of the aged people in the society will increase continuously. In addition, despite the fact that in the country the elderly individuals are usually being taken care by their families, health teaching to the at risk clients is one of the responsibilities of the nurses. Hence, it is necessary to assess the particular educational needs of the nurses for age-related courses. This data will provide a situation for the students who are being trained by the existed nursing curriculum to study age-related nursing courses and to be efficient nurses when this group of population will get older in future.

- In the USA, similar research was conducted by Solon et al (1988). It was the third section of a national survey about the ageing-related education. All baccalaureate programmes in nursing were addressed by this survey, giving a 65% response rate. Following pilot-testing and refinement of the instruments in 1984, data collection by mail questionnaires was launched. The survey focused on the academic year 1983-84. Two-tiered querying was directed to the dean, with a supplementary questionnaire supplied for the dean to distribute to

organizational units of the programme that were doing any ageing-related teaching. Seeking a wide range of information, the questionnaire was lengthy, and not always fully completed.

In the aggregate for all schools, the following percentage of all the schools' courses were reported to have explicitly conveyed ageing-related material of all:

- Required courses, 14%
- Elective courses, 4%.

Nearly three fifths of the electives were reported as being totally devoted of ageing-related content, whereas among required courses, one tenth exclusively addressed ageing. As it was frequently reported, nursing homes or other long-term care facilities were used as placement settings.

Almost all the prelisted set of ageing-related topics were reported by a majority of deans as required topics, possibly reflecting the popular tendency toward integration in curriculum structuring. There was also a strong tendency among nursing educators to favour integrating gerontologic teaching with more generalized subject matter. The responses showed that less than one-third of all faculty were engaged in some ageing-related teaching. The students were exposed to all ageing-related instruction by 18% of total teaching time. The majority of students were exposed to geriatric clinical experience with variations in its quality and quantity.

The deficiency of this study, was low rate of returned (less than 60%) and fully completed questionnaires. This led to limitation of generalizability of the results. In addition, the investigators failed to mention the process of establishing of reliability and validity of the instruments used.

The findings of this study indicate that the inclusion and emphasis

on ageing-related instruction in nursing curriculum depends upon the size of the geriatric population. This fact and also any changes in population figures should be taken into account in nursing curriculum development.

- On this side of the Atlantic, in the UK, another survey about ageing and its relationship with student nurses was accomplished by Watkins (1991). It was conducted in order to test the validity of the view among nursing staff involved in caring for elderly people that **Project 2000** curricula were not aimed at providing adequate preparation for nurses to work with elderly individuals. A postal questionnaire was devised and sent to seventeen centres who were asked to complete a separate questionnaire for each of the branches of programmes they were conducting at that time. The response rate was:

- General nursing, 11%;
- Mental health, 8%;
- Mental handicap, 4%.

The questionnaire had three main close-ended questions in which respondents had just two choices (Yes or No). Some of the centres that responded pointed out that they had only just commenced their common foundation programmes and that details of curriculum hours allotted to certain subjects for the subsequent 18-month branch programmes were not yet available. Less than one-third of respondents expressed the need for post-basic education programmes to be continued and developed to more thoroughly prepare nurses to work with elderly people.

The report suggested that initial feeling of concern regarding inadequate student preparation to care for elderly people was, to a large extent, being disproved with one or two exceptions. In fact, the researcher had a very optimistic opinion because, for example the

question No. one: "Do your **Project 2000** students spend specific periods of time working clinically with elderly people?" (Watkins, 1991) is too general to be interpreted precisely. The criterion of the time in first question was ambiguous, particularly when the respondents had not any room to comment on a mailed questionnaire with Yes/No options. The rate of the returned questionnaires, the responsibility of the respondents (directors/tutors), research environment and also whether a pilot study has been done, are not revealed by the reporter. The results would more reliable if:

- the data were involved the observation of the students in working with elderly people;
- in addition to the directors/educators, the opinions of staff nurses who felt that 'the Project were not aimed at preparing student nurses to work with elderly individuals' were requested;
- the research questions and their answers were precise and measurable;
- the respondents could express their viewpoints.

Hence, it seems that the study could hardly be considered as a deep and valid research.

• Teaching about social problems was an important area for evaluating the curriculum of practical nursing programme at the Milwaukee Area Technical College in the U.S.A. by Dyer and McCauley (1985). The concerns included:

- The economic recession and problem of job market;
- Competition among nursing schools for practice areas, especially in hospitals;
- High faculty-student ratio.

An extensive survey were conducted in 165 hospitals, nursing homes and other health-care agencies. Their employers were asked about the future needs for practical nurses in their agency. The findings showed that while the need for practical nurses was declining especially in hospitals, there was also still a need for practical nurses in nursing homes and that this need would continue for years to come, because the elderly population is increasing. After interpretation of the data, main curriculum changes comprised:

- To develop a geriatrically oriented curriculum that would prepare graduates to work in nursing homes;
- To offer fewer courses, but more comprehensive. Five courses were offered each quarter with emphasis on a different age group or phase of the life cycle.

The report did not outline the process of data collection nor did it describe the method used in sampling. Therefore, there is not any room for judgement about methodology of the research. This survey emphasizes the importance of identifying society's need for health care delivery and that the need should be considered in the provision of nurse education programmes.

3.4 Methodology Related Studies: One of the important parts of the teaching-learning process is teaching strategy. There is, among educationalists, a general agreement that progressive (discovery/problem-solving) methods of teaching and learning are more useful than traditional forms of teaching and learning. There is evidence that individual learners respond differently to teaching strategies. What is beneficial for one person may be less useful for another person. Therefore, the individual learning needs and styles need to be identified.

As Cowman (1995) believed research on methodology of nurse education generally conclude that the roles of teacher and student operate around a mechanistic view of man with the teacher being viewed as the font of all knowledge and the students the passive recipients of that which was given.

- Identification of teaching strategy in schools of nursing was a part of a larger study into the Introductory Courses preparation of student nurse learners, and the demands that were made of these learners when working in their first ward of allocation. The aim of investigation was to identify which teaching strategies were chosen by nurse teachers when teaching the theory and practice of nursing. The study was conducted by Gott (1982) in three schools of nursing serving three hospitals. The subjects were observed and also interviewed. They were:

- 32 nurse teachers (tutors and clinical teachers),
- 33 nurse learners,
- 33 trained ward staff.

Approximately one-third of all teaching sessions provided at each school were observed. The teaching of practical nursing skills was sometimes carried out by the use of set procedures. The principal method chosen by the teachers observed was traditional, and usually involved delivery of a formal lecture. There was very little student activity or involvement and students were, for the most part, seated in rows with the lecturer addressing them from the front. On limited occasions, teaching aids were used in lectures. During some of classes, an overhead projector or a film were used. No form of evaluation was used during lessons. In one school, a hand-out or procedure sheet, containing the main teaching points, was given at the end of most nursing practice sessions. During the ward experience, students had an opportunity to practice skills taught.

However, it is recognized that class size and lack of resources influenced the choice of teaching method. The researcher concluded that teaching methods such as problem solving/discovery methods (which are called progressive methods), make more resource demands on nurse teachers in terms of time, space, equipment effort and management. If those methods are to be implemented there will need to be substantial increase in the number of nurse teachers employed.

The method of data collection, the number of different samples and class sizes were mentioned by the researcher. There were some ambiguous points about the methodology of study in the report such as: the method of sampling among the tutors, the students and observation of classrooms; and also technique of decreasing errors in application of qualitative data.

As Gott (1982) described the class size and lack of resources can have influence on the choice of teaching method. These findings are consistent with the results of the research on methodology component of nursing curriculum in Iran.

- Many authors recommend the student-centered approach as a successful teaching-learning strategy (Dowd, 1983; Rogers, 1983; Marshfield, 1985; Raichura, 1987; O'Kell, 1988; Costello, 1989). These studies indicated it is better that appropriateness of the style and method of teaching be negotiated to take place between the lecturers and the students. Therefore, the educationalists cannot make assumptions about the methodology of teaching-learning.

A survey of lecturers and students was undertaken by Burnard and Morrison (1992) to explore their preferred teaching strategies, using a questionnaire. The aim of this study was to explore perception of

teaching by a group of nursing students and a group of nursing lecturers. The samples were obtained from a total convenience samples (70% overall return rate). Data was collected using two similar questionnaires: one for the lecturers and one for the students. A Likert-type scale was used to gather this information.

The results indicated that both students and lecturers appeared to be in agreement that students should challenge each other, students should share information with each other and that the teacher should encourage students to release emotion. On the other hand, the students more often suggested that the lecturers should lead the learning session than did the lecturers. These findings suggest that the lecturers were more supportive of a student-centred approach to learning than the students were. The lecturers felt the students should take more responsibility for their learning whilst the students felt that the lecturers should organize and manage the learning experience. For some students and some lecturers, there were different priorities in the way that educational experiences were organized.

In order to consider variations in individuals' learning strategies among nursing students, it is better to investigate different learning situations such as classroom, clinical settings or community. Different styles of teaching and learning may be appropriate for different areas of subject matter and skills. In addition, this study had been done by a standardized questionnaire which helps to decrease error of measurement. The samples were a particular group of students and lecturers at a particular time (convenient sampling) and therefore they are not representative of the population of students and teachers and the results may not be generalizable. However, the comparison of the lecturers' and the students' point of view in the study of Burnard and Morrison (1992)

and also the identification of the agreements and discrepancies of the participants' viewpoints were applied to the 'evaluation of nursing curriculum in Iran'. As these findings confirm, to achieve an effective teaching-learning process, both of teacher and learner should be active. It means that, in addition to consideration of different learning situations (classroom, clinical settings or community) and also the facilities (class size, resources, etc.), it is necessary to negotiate the acceptable strategy for teaching between lecturers and students in the nursing faculty.

- The determination of the teaching/learning preferences of student nurses was the aim of a study which was undertaken by Cowman (1995) in the Republic of Ireland. An added objective of the inquiry was identification of whether or not significant differences existed between student nurses undertaking:

- general nursing,
- psychiatric nursing,
- sick children's nursing,
- mental handicap nursing.

The population of this study was the total student nurses in 32 Schools of Nursing in the Republic of Ireland which commenced training during autumn 1991. Data were collected using a questionnaire included a rating scale for selection of twelve different teaching/learning strategies (96% return rate). The students were requested to select from the different strategies in order to choice, stating 1 as the most-preferred and 12 as the least-preferred method. The strategies were:

- films,
- slides,
- lectures,

- video,
- role play,
- use of models/objects,
- group work,
- computer-assisted learning,
- seminars,
- case studies
- demonstration and practice,
- library work with self-directed learning.

While the literature indicate that nurse teachers espouse student-centred ideologies, many of students express preferences for teacher-structured approaches. In this study the students reflected preferences for more teacher-structured strategies. Significant differences were identified between the preferences of the four groups of student nurses who undertook: general, psychiatric, sick children's, mental handicap nursing.

Overall, demonstration and practice was the most popular choice of teaching/learning strategy. Lectures also received a very high preference rating from all groups of students. The highest preference for the lecture method occurred amongst the general and mental handicap nursing groups. The use of models and objects for teaching/learning purposes received the highest preference rating from the general and sick children's nursing student groups. Role play as a learning strategy was more favourably rated by psychiatric and mental handicap nursing students. Computer-assisted learning was the least preferred teaching/learning strategy. Finally, group work received the lowest preference rating from the general student group.

Although the study did not mention the time of data collection in each course, it seems that according to the differences in fields of the

students' study, the respondents have had varied backgrounds and experiences about nursing. If their preferences on different approaches of teaching were compared at two stages during the course of study it could increase the validity and reliability of the findings. The results indicated that the students' preferences for teaching/learning approaches were varied in different nursing groups. The reason perhaps is related to the nature of the courses which were taught. These findings provided the basic information for interpretation of the results of the research on evaluation of methodology component of nursing curriculum in Iran which indicated that the student nurses who participated in that study had different perception about the methodology of different nursing courses. For instance, methodology of some nursing courses such as psychiatric and management which are mostly taught by lecture, gained the highest scores from the students' point of view among the nursing courses. In contrast, this teaching approach had the lowest score for teaching of mother and child health nursing.

In many cases the use of special method of teaching depends upon the facilities of nursing schools. However, the students' learning will be promoted if the preferences of them for each nursing course be considered by their teachers.

3.5 Evaluation Related Studies: Very few educational studies are conducted on the evaluation components of the curriculum. Although the assessment of students is a part of evaluation component, many of those inquiries are about the approaches to assessment of students. In addition to the assessment of students, there is a need to be more attentive to the other aspects of evaluative studies of curriculum including: assessment of teachers, choice of a model of evaluation for theoretical and practical

courses among different approaches, competency of courses, process of teaching/learning, etc.

- A study was conducted in Scotland by Whiteley (1992) in order to consider the application of theory to practice in terms of a working evaluation model for assessment of continuing education courses. The aim of the initial study was to explore those issues which were relevant to the programme, rather than just those issues put forward by either the evaluator or those requesting the evaluation. The instruments of the study were asked of the colleges using a questionnaire with a follow-up semi-structured interview. The important issues that were identified included tangible structural components such as:

- building space,
- staffing,
- library facilities,
- adequate funding.

There were some intangible structural components such as:

- programme rationale,
- guidelines for modules,
- validation protocol.

This information provided an insight into what questions were required to be asked of all colleges of nursing and midwifery who would be providing modules for continuing education. From the interviews, broad information was collected concerning:

- module development,
- teaching approaches,
- student assessment,
- student supervision,

- release of staff.

This information was followed up in a sample of colleges with the teaching staff to provide more specific data. At this point, by using the results of the initial study, the emphasis of the future study changed and the participants became involved. They provided answers to the process questions that related to them, in terms of receiving the course. In relation to the participants, students were asked what teaching methods they had experienced, whether they had found them effective or not, whether they had received adequate supervision, how the practice placements were utilized and how easy or difficult it was to be related for and actually attended a college based input. By using pre- and post-continuing education course questionnaires plus individual semi-structured interviews it was possible to collect the relevant data.

Finally, teaching outcomes were determined. Measures such as: overall effectiveness, changes in knowledge, attitudes or behaviour, and whether needs were met were all assessed.

The investigator allocated an extensive part of the report to history of educational evaluation and did not specify some significant aspects of the study, For example: who were the respondents of this enquiry in each stage (she nominated them provider and participant), which research instrument were applied for them and what were their characteristics. She failed also to define the sampling technique, methods for ascertaining validity and reliability, and methods of data gathering for each possibly parties (by face-to-face or indirect approaches etc.).

Unfortunately the ambiguous above mentioned points are a major obstacle to get a precise conclusion about the study.

- A large investigation undertook in Czechoslovakia under supervision of

Mares (1990) in two parts. The aim of inquiry was to reveal an appropriate model for instruction evaluation in higher education. Students' rating was used as one of the methods of instruction evaluation.

The first part of the study examined characters of: educational effectiveness, instructional effectiveness and pedagogical evaluation. Three approaches to the evaluation of higher education quality were analyzed. It was emphasized that instructional quality is a relative term, multifaceted, with subjective elements and complex conditions. A possible model for university instruction evaluation was presented and its eight variables were specified. A general strategy of such evaluation was described and attention was drawn to the fact that every assessment is based on a rough or clear concept of the best instruction under given conditions.

The second part of the study focused on 'evaluation using rating scales'. Students were said to be the most frequent evaluators of university instruction quality. There were some objections among the lecturers to the rating scales and negative experience with the students' non-professional application. Practical instructions including an appropriate moment of administration, necessary number of raters, statistical analysis of significance of the results obtained were explained. Information about factor which may affect or even bias the assessment, i.e. validity of the results and also procedures enabling a statistical analysis of the reliability of results were discussed.

The study emphasized that student evaluation is only one of many methods for instructional quality evaluation and that it has not only its merits but drawbacks as well. A warning was given not to use rating scales in an unqualified manner and not to overestimate the results obtained especially for a summative evaluation. The researcher stated

that the presented information could be useful for university teachers, academical officials and people dealing with measuring quality of higher education. The language of the main study is not English and unfortunately the English abstract did not do more than point out the findings.

3.6 Summary: Chapter Three reviewed the investigations on nursing courses or a particular component of nursing curriculum. Those inquiries fall in the following category:

- **Aim of the studies** Most of the studies were focused on **situation of nursing education** in different educational institutions, current or desired core concepts of a particular nursing course, and suggestion of solutions for their difficulties (e.g.s Dyer et al, 1985; Solon et al, 1988; Clark and Tomlinson, 1989; Watkins, 1991; Sherman and May, 1991; Selby et al, 1991; Hanson and Heims, 1992; Dvorak et al, 1993). Aim of a few of them were **evaluation of a nursing course** especially psychiatric nursing and they monitored the performance of the students consequence of some changes in the content. Mostly performance of the involved students had improved and the respondents expressed their satisfaction (Chambers, 1987; McCormick and James, 1993).

- **Content of the studies.** The mentioned studies sought the **opinion of students or director/teaching staff** of nursing institutions. Except the study of Burnard and Morrison (1992) the other investigations did not request and compare the viewpoints of the directors/teaching staff and the students together. Much data were gathered including: the best time of teaching the course, strengths and weaknesses of the courses, prerequisite courses, demanded nursing skills,

needs assessment of those courses, etc. There were some studies focused on **methodology of nursing education** in different educational institutions (e.g.s Gott, 1982; Burnard and Morrison, 1992; Cowman, 1995). In most of them traditional strategies of teaching (lecture) were preferred by students while nurse teachers were more supportive of a student-centred approach. Students preferred different teaching strategies for varied courses with significant differences between courses. This findings are consistent with the study of Paul, Bojanczyk and Lanphear (1994) on learning preferences of medical students that indicated most students preferred teacher-structured learning experiences.

- **Methodology of the studies** The mentioned inquiries used two kinds of educational investigations: the **qualitative approaches**, observation and interview (e.g.s Gott, 1982; Chambers, 1987; Whiteley, 1992; McCormick and James, 1993) and the **quantitative approaches**, questionnaires (e.g.s Dyer et al, 1985; Solon et al, 1988; Clark and Tomlinson, 1989; Sherman and May, 1991; Selby et al, 1991; Watkins, 1991; Burnard and Morrison, 1992; Hanson and Heims, 1992; Dvorak et al, 1993; Cowman, 1995).

Considering the results of the above mentioned inquiries and comparing them with the existing research (evaluation of the nursing curriculum), led to the identification of some positive points among those research. Although the studies on individual courses or a particular aspect of the nursing curriculum are numerous, their findings are not generalizable. In addition, humanistic phenomena such as education (particularly vocational education) are too complex and focus on only one aspect of inquiry is not satisfactory. Overall, in order to gain comprehensive results in each educational research, the proper approach is application of

"triangulation technique" that utilizes a set of different methodologies, instruments, subjects, etc.

PART THREE: CONCEPTUAL FRAMEWORK

"Any investigation, whatever the scale, will involve reading what other people have written about the area of interest, gathering information to support or refute the arguments and writing about the findings."

(Bell, 1993, p.33)

Every researcher needs to provide evidence to indicate that he or she is familiar with the relevant literature and has some awareness of the current state of knowledge on the subject of the research. Abdellah and Levine (1979) who are the pioneers in scientific nursing research, defined a conceptual framework as:

"A theoretical approach to the study of problems that are scientifically based and emphasizes the selection, arrangement, and clarification of its concepts. A conceptual framework states functional relationships between events and is not limited to statistical relationships."

(Abdellah and Levine, 1979, p.693)

Holm and Llewellyn (1986) also listed the common functions of conducting a literature review. They believed that it is a source for research ideas, orientation to what is known, defining a conceptual context, defining the variables, and finally guiding the design and methods.

Part Three builds the basis for a better understanding in the form of conceptual framework and is made up of two chapters. The first chapter, Chapter Four, is related to the concept of "curriculum". The

second chapter, Chapter Five, is concerned with "evaluation", and its related context.

CHAPTER FOUR: CONCEPT OF CURRICULUM

"The first recorded use of the term 'curriculum' in the English-speaking world was in The University of Glasgow in 1633."

(Hamilton and Gibbons, 1980)

4.1 History of the Curriculum: As Kemmis and Fitzclarence (1986) stated, the word "curriculum" meant a circular athletic track in Latin. In other words, curriculum was interpreted as a route or a course that the runners would pass from the start to the end competitively. This concept illustrates the predetermined nature of educational courses. The earlier terms used to describe courses of study were *disciplina* and *ratio studiorum*.

The word "curriculum", as a technical term in education, emerged as part of a specific process of transformation of education in the University of Glasgow, which spread through Scottish usage and the transformation of schooling in Scotland into widespread general use.

Jamieson and Sewall (1954) stated that the advent of organised nurse training 120 years ago in the U.K. was accompanied by opposition and argument. They compared the viewpoints of Miss Nightingale as a proponent of [academic] nurse training with the opponents. Miss Nightingale had insisted that nurses would have had a course of class instruction and also practical training in hospital. But the doctors of the

time sensing in these revolutionary proposals a criticism of their own arrangements for the nursing care of their patients and countered with the statement that nurses were in the position of housemaids and they needed only the simplest instruction.

Murdock (1983) regarded these early schools and their curricula as very primitive. This period is called by her as 'Pioneering or First Stage in Curriculum Development' that related to years before 1893. 'Standardization or Second Stage in Curriculum Development' is related to the years 1893-1950. She considered that the dynamic movement of the 1940s, in introducing a new approach to curriculum development, was instrumental in that the focus shifted to the process of change rather than to the change itself and nursing faculties became directly involved in that process. A major influence which emerged during this period was the work of Tyler. His writings (1949) provided a link between past and present curricula in nursing history as well as in the curriculum field in general.

Alexander (1983) stated that the most controversial issues in nursing were: whether any education for nursing is necessary, what is a relevant education and training, and of where, when and by whom should be provided. Nowadays the protagonists and antagonists of the various arguments and proposals about the nature of nursing and its education (or training) are to be found much more within the ranks of nursing, and the battle is not over yet.

"The origins of the system of nurse education and training which in this country (Scotland) are known today, can therefore be accurately traced to the late 19th century and the ideas and vision of Florence Nightingale. Although at that time the extent of nurse education was minimal by the standards of today, the

principle was established and 'in Miss Nightingale's opinion both education and service were integral and equally important aspects of the probationer's training'."

(SHHD, 1963, p.1)

The training programmes in the early schools were based on a simple job analysis of nursing as it then existed and were aimed at assisting the student to comprehend all that the nurse is required to know and to do at the bedside of the sick.

"A list of the beside functions to be mastered was distributed to the students and provided the focus for the content of the programme of study. The list was copied from one used earlier by the Nightingale school in England. Most of the instruction was conducted through ward experiences, and little attention was paid either sequence or the relative proportion of the experiences within the total curriculum. The limited classroom instruction consisted of lectures by physicians and note taking. Recitations were conducted by the ward nursing staff."

(Stewart, 1943, p.3)

According to Lawn and Barton (1981), in Britain, curriculum studies developed from the mid 1960s with the expansion of teacher education. The studies were mainly derived from innovations in the United States and incorporated the components of input, design, testing and consumption.

Murdock (1983) called 1970s as 'Structural Diversity or Third Stage in Curriculum Development' because, ongoing developments in education had a profound influence upon curriculum thought and practice in nursing during the 1950s and 1960s. Finally, the 'Fourth Stage in

Curriculum Development' of nursing has begun and is called "Conceptualization, Integration, and Nursing Models" period.

"The influence in general education can be seen in nurse education as a result of nurse teachers undertaking the Certificate in Education courses in education departments. This is demonstrated by the extensive use in the 1970s of behavioural objectives in the nursing programmes."

(Crotty, 1993, p.1647)

1980s is called by Kenworthy and Nicklin (1989) as "time of curriculum studies" with significant developments in the assessment and examination of students and the evaluation of courses. Curricular planning and development teams in Britain had been demanded by the statutory bodies, and effective evaluation became a vital part of the Boards' strategy for the reapproval of courses. According to Kenworthy and Nicklin (1989) schools of nursing responded to these challenges and, in particular, nursing service staff, i.e. ward sisters developed very real skills in curricular planning, particularly where courses had an experiential emphasis. A few schools of nursing were able to allocate some of their resources to the creation of senior teaching posts dedicated either solely or partly to curricular studies.

4.2 Concepts of Curriculum Curriculum research brings the research worker into one of the most difficult problems of philosophy, namely, the nature and structure of knowledge.

"Almost every teacher and curriculum worker assumes that knowledge has structure and that the mastery of a subject matter area involves the acquisition of far

more than a mere collection of separate pieces of information. What the structure of knowledge is remains debatable."

(Travers, 1978, p.105)

Different concepts of curriculum and approaches to curriculum planning have emerged from both theoretical and practical sources during the last two decades. Blenkin, Edwards and Kelly (1992) stated that, in broad terms, three quite distinct concepts of curriculum and models of curriculum planning can be discerned. These concepts are both embedded in the practice of teachers and in the theoretical perspectives which have been offered as a basis for that practice.

- One can view the curriculum as a body of knowledge-content and/or subjects, and education as the process by which these are transmitted or "delivered" to students by the most effective methods that can be devised.
- One can see the curriculum as consisting of a statement of the step-by-step shorter-term objectives and education in terms of its products designed to achieve certain ends or aims that by curriculum these aims are to be attained.
- One can see the curriculum as a statement of the procedural principles and education as a process or a series of processes that, in the light of curriculum, teachers will seek to support and promote those processes.

"In short, being educated can be conceived in terms of what one knows or must be brought to know, or in terms of what one has become or must be made or helped to become, or in terms of how one has developed or should be helped to develop. And the curriculum can be conceived in terms of its *content*, its *products*, or its *processes*. Curriculum planning

can be seen as requiring the prestatement either of knowledge-content and subjects, or of aims and objectives, or of procedural principles. And the teacher's task can be viewed as either to transmit that knowledge, or to achieve those aims by way of the step-by-step objectives, or to promote the processes of educational development by constant reference to those underlying procedural principles."

(Blenkin et al, 1992, p.23)

4.3 Classification of Curricula The concept of curriculum has been further subdivided, and some of them are usefully applied by Bradshaw (1989) to nurse education. These sorts are as follow:

- **the official curriculum** which is the laid down policy of the school. It reflects the statutory requirements of training.
- **the formal curriculum** which is the learning planned by the school. The detailed syllabus, allocation programme and selection of teaching strategies all contribute to the formal curriculum.
- **the actual curriculum** which is the actual teaching and learning that takes place and may not reflect the official or formal curricula. The individual teacher will decide what is learnt. In this context the teacher is anyone involved in teaching nurses, e.g. nurse teachers, nurse practitioners, other members of the health care team and also patients.
- **the hidden curriculum** which is the transmission of attitudes and values from teacher to student or from the wider context of the institution to its students. There are many hidden values in nursing which may influence the student. There are certain attitudes which are expected of nurses and many of them do not form part of the formal curriculum.

An example of hidden curriculum in nursing stated by Quinn (1980):

"The attitude that the nurse is the handmaiden of the doctor, rather than a professional equal is a hidden curriculum. This is never stated explicitly, but the behaviour of some senior nursing staff may reinforce this role in the mind of the learner."

(Quinn, 1980, p.73)

4.4 Definitions of Curriculum:

"Definitions do not necessarily help understanding, but it is sometimes necessary to attempt to clarify meanings, especially where words are used in quite different ways in different contexts."

(Lawton, 1983, p.1)

Mathews (1989) believed that the value of definitions is limited, because they often just point to something and do not describe its essential characteristics. He stated that a curriculum is more than just a short form of words, it actually happens. It is an activity in which people engage; a complex, observable phenomenon with many dimensions, and those dimensions cannot be adequately described in a single sentence.

The term curriculum is sometimes confused with other educational terms such as syllabus, timetable and allocation programme. Bradshaw (1989) considered these terms as all different aspects of education. Therefore, any discussion of curriculum must commence with a review of definitions of the curriculum.

The authors of the many books and other publications on curriculum have usually presented a particular conception of the curriculum. According to Saylor, Alexander and Lewis (1981) "many of these conceptions have contained similar elements, if not phraseology, and

some efforts at their classification have been made" (p.3).

Curriculum is a term much used in education, often without clear understanding of its meaning.

"Even experienced teachers and other educationalists involved in course design and development use the word in many different situations to mean many different things. Such common usage is both confusing and generally of little use to those who wish to make a serious study of curriculum and apply correctly its theoretical possibilities to educational practice."

(Greaves, 1987, p.1)

From Quinn's (1980) point of view, it is necessary to distinguish the concept of curriculum from two other related aspects, namely syllabus and timetable. The syllabus consists of concise statements of subject-matter for a course of study. A timetable on the other hand, is a schedule of the times of the classes, their venues and teachers.

Adams (1968) has also a similar statement about curriculum and its similarities between the syllabus and the timetable. He stated that the curriculum means much more than simply a course of study to be followed, but needs to be differentiated from syllabus which is simply a list of subjects to be learned. Curriculum means a set of experiences serving to restructure response predispositions.

Curriculum writers and theorists are searching for meaning in the study of curriculum through definition. Curriculum has been defined as both content and process, as what is taught in schools, and as the process of deciding what to teach.

"Definitions range from a written plan to the whole schooling process. The curriculum is a document; a

syllabus; a process for developing a plan; it is the plan and the execution; it is a system; it is a structure of an undefined discipline. Its real meaning can only be found in social science concepts: society, culture, the nature of knowledge. Phrases like "planned learning experiences," or "a structured series of intended learning outcomes," emphasize either planning or teaching for what the student learns."

(Sharpes, 1988, p.10)

Lawton (1983) pointed out the problem about the meaning of curriculum in different languages.

"Some languages do not even have a word for curriculum, and translators at international conferences are faced with a difficulty. In French, for example, "curriculum" tends to be translated by the phrase *course d'etudes* (course of studies) which often conveys quite the wrong flavour of meaning intended by the English writer."

(Lawton, 1983, p.1)

Curriculum can refer to the total structure of ideas and activities developed by an educational institution to meet the learning needs of students and to achieve desirable educational aims.

Saylor et al (1981) believed that limiting the definition of curriculum to any conceptions would restrict thinking and block consideration of important alternatives. They enumerated three conceptions of the curriculum as follows:

- subject matter,
- experiences,
- objectives.

Clearly all of the above issues play a role in education and an adequate definition of curriculum should encompass them all together. Bevis (1982) has a similar opinion about the curriculum particularly in nursing.

"The curriculum is the manifestation of many composite parts and factors which together enable the achievement of nursing educational goals that have been fully identified, selected and articulated."

(Bevis, 1982, p.8)

The classic definition which is the most well known definition is given by Stenhouse (1975):

"A curriculum is an attempt to communicate the essential principles and features of an educational proposal in such a form that it is open to critical scrutiny and capable of effective translation into practice."

(Stenhouse, 1975, p.4)

He pointed out that the different aspects of a curriculum should be organised so that they be not only capable to be translated into practice but also be open to critical scrutiny. It could be stated that the weakness of this definition is the ambiguous nature of the main elements and activities in which a curriculum is taken place. In fact, he only noted the quality of relationship of varied aspects of curriculum.

The definition of curriculum presented by Kerr (1968) has many advantages for nursing. Many of nursing authors such as Quinn (1988) believed that the Kerr's definition is appropriate for nursing education. They assert that this definition reminds us, in nurse education/training, that much of the learning will take place in the various care settings, be it a medical ward, accident and emergency department or community

experience, but only includes planned learning, yet many important insights are often gained accidentally by students as a result of interaction in classes or clinical settings. Kerr (1968) stated:

"Curriculum is all the learning which is planned and guided by the school whether it is carried out in groups or individually, inside or outside the school."

(Kerr, 1968, p.16)

Quinn's statement is confirmed by Davis (1987) who emphasized the usefulness of the Kerr's definition for nursing.

"The student may receive teaching on a one-to-one basis, particularly in relation to the development of practical skills, in small groups in the clinical and school setting, or in large groups in the formal lecture-room setting. It must also be recognised that some of the learning activities will be the responsibility of "non-teaching" staff. Kerr's definition emphasises that even though learning takes place in other settings, this learning must be *planned and guided* by the school, and therefore this learning is an integral part of the curriculum."

(Davis, 1987, p.2)

4.5 Frameworks of Curriculum Marsh (1992) defined a curriculum framework as a group of related subjects which fit together according to a pre-determined set of criteria to cover an area of study appropriately. Accordingly, each curriculum framework provides a structure for designing subjects and a rationale and policy context for subsequent curriculum development of these subjects. He stated that a curriculum framework document usually includes:

- a rationale or platform,
- scope and parameters of the curriculum area,
- broad goals and purposes of subjects within the curriculum area,
- guidelines for course design,
- content,
- teaching and learning principles,
- guidelines for evaluation of subjects,
- criteria for accreditation and certification of subjects,
- future developments for the area."

(Marsh, 1992, p.73)

4.6 Features of the Curriculum In general, most of the educationalists have some similarities in their viewpoints. They believe that the main sources for curriculum development are:

- learner who has been learning,
- subject which is taught,
- the environment in which the learning is taken place.

One of the oldest opinion about the sources of the curriculum is the idea of Tyler (1949) which developed a number of years ago. For making curricular decisions, this system was often referred to as the "Tyler Rationale" which offers an approach to the selection of objectives that is designed to make the educator more systematic and circumspect in the selection. According to this scheme, the curriculum maker uses three sources:

- student,
- society,
- subject.

He screened these tentative goals by means of his philosophy of education and a psychology of learning in precise terms of measurable learner behaviours. Saylor et al (1981) believed that the sources of consideration

to make choices for curriculum planners are:

- **Learners:** the purposes, interests, needs, and abilities of learners should guide curriculum planners;
- **Society:** the aims of education are shaped by the values and behaviours defined as desirable in a given society;
- **Knowledge:** has been centre of the curriculum planning for a long time.

Orlosky and Smith's (1978) emphasis was that both the learners and society could be important sources of the curriculum. By studying the learners themselves, particularly their needs and interests, the curriculum maker may discover worthwhile objectives that might otherwise not have occurred to him. They stated that second source of possible objectives can be found in an examination of contemporary life outside the school.

Because of the complexity of human society, it is necessary to develop manageable categories for study. As Orlosky and Smith (1978) stated, society can be studied, among other things, in terms of:

- health,
- family,
- recreation,
- vocation,
- religion,
- civic affairs.

Knowledge is regarded by Saylor et al (1981) as a third source of objectives. However, it is not the only way of knowing the world in a weak-to-strong hierarchy, but also it is a spiral movement which every base is a part of development of knowledge. Dometrius (1992) believed that knowledge is based on the suggestions of subject specialists and has

four common bases. He stated:

"• *Common sense* which is everyday practical knowledge and is a very weak way of knowing the world. In everyday life, common sense is necessary and useful. We need habitual patterns of thought and behaviour.

• *Intuition*, which is an inner feeling or sense that some things are true.

• *Rational* knowledge, which is the logical derivation of conclusions from premises. One starts with certain statements that are held to be true and then to deduce conclusions about everyday life.

• *Empirical* science which is based on what we can observe through our sense: touch, sight, smell, taste, and hearing."

(Dometrius, 1992, p.2)

Knowledge and science is commonly used in nursing curriculum development.

4.7 Components of Curriculum The elements of the curriculum have been categorized by theorists in different ways. Taba (1962) mentioned the main elements of curriculum and the way of identifying them in the process of curriculum development. She stated that:

"The elements of curriculum are a statement of aims and objectives; the selection and organisation of content; the pattern of teaching and learning; and a programme of evaluation of the outcomes. One way of identifying these elements is to consider the major points at which decisions need to be taken in the process of curriculum development."

(Taba, 1962, p.10)

The majority of curriculum theorists such as Wheeler (1967), Jarvis and Gibson (1985) used these elements in their works. They often replaced

the 'learning experiences' by 'teaching methods' in which both teaching and learning are emphasized, and sometimes recognised 'evaluation' as including the assessment of learning outcomes, while in other schemes it is viewed as a separate entity from assessment. There are interrelationships between each elements. This category is accepted for nursing education as the concern of the curriculum and comprises:

- the intentions and purposes,
- the content,
- the methods,
- the evaluation.

4.71 Intentions and purposes of curriculum The starting point for purpose in the curriculum is the formulation of a statement of the philosophy for the curriculum.

"The statement of a nursing programme's philosophy is perhaps the most important document in the curriculum development process, setting forth beliefs that will provide the foundation for developing the objectives and conceptual frameworks of the programme."

(Lawrence and Lawrence, 1983, p.162)

Before a curriculum can be developed, a series of decisions usually has to be taken which are the indication of the beliefs and centrally held values of those people who will be involved in the programme.

"The decisions which will be made about the intentions and purposes of the nursing curriculum should be based on the evidence available about the nature of nursing. The different types of skills and the roles that the nurse will develop are considered as

part of the end product and the intended outcomes of the curriculum."

(Greaves, 1987, p.9)

Mathews (1989) enumerated the characters of aim as follows:

- they are *general* rather than specific,
- they are *remote* rather than immediate,
- they reflect a particular view of *society*,
- they have a *cultural* base,
- they reflect judgements of *value*." (p.5)

These characters are considered by most of the authors in education who often provide a broad philosophical perspective for the aim of curriculum. For instance:

"Aim attempts to give both shape and direction to a set of more detailed intentions for the future. It is an ideal, an aspiration, a direction in which to go."

(Davies, 1976, p.12)

Barnes (1982) pointed out the problem of general aims. He stated that according to the nature of the general aims, they leave the teacher with the practical decisions to be made about what to teach and how to teach it. There has been much debate about how best to do this.

Thus, an analysis of the role and function of a nurse is necessary in order to determine the aim of a nursing curriculum. It is also essential to analyse his/her knowledge which are necessary to fulfil the nursing functions. Greaves (1987) explained the differences of the intentions, aims, and purposes of the curriculum.

"The intentions of the curriculum are those things which need to be done, and the purpose of the

curriculum as the reasons or justifications for doing them. The word 'aim' is generally used in the curriculum to indicate purpose and intention. Aims are generally developed as an initial broad framework of what the purpose is and what the intentions are."

(Greaves, 1987, p.10)

On the other hand, in contrast to the aim, the objectives are more specific statements of the philosophical perspective of the curriculum and may be viewed as the means to achieving the long term intention.

"Objectives usually provide the actual direction over a more immediate time span. They may be expressed along two continua from general to specific, or from long-term to medium-term to short-term."

(Jarvis and Gibson, 1985, p.24)

One of the pioneer theorists in education, Wheeler (1967) divided the objectives of curriculum into three phases and determined their domain of activities as ultimate, mediate and proximate goals. He (1967) believed that the ultimate goals are synonymous with the aims, the mediate ones relating to the specific development of a subject and the proximate relating to the direction of the individual lesson.

The observable actions and behaviours are the important point of objectives. The pre-specification of aims and objectives is the result of educator attempts to provide direction for development of the curriculum at every level. However, the desirability of providing such direction is open to considerable question, particularly that it proposes a teacher-centred learning model and this is not necessarily acceptable to educators of adults (nursing students).

Perhaps the most important thing about objectives for the nursing

curriculum is that they should be relevant and meaningful in whichever context they are used. Greaves (1984) described the characteristics of an adequate objective that:

- the objective should relate clearly to the educational aim of general nursing;
- the objective should state what the students would be able to do after the learning experience that she could not do before it;
- the objective should develop in detail by specifying the conditions of performance;
- a standard of performance should clearly be stated.

The objectives are therefore the attempts to describe what is involved in the actual learning and the extent to which the student can or ought to be able to do something at the end of a particular experience.

4.72 Content of Curriculum This aspect of the curriculum is conceived with the specification and design of what has to be learnt. There are a number of points that curriculum developers such as Jarvis and Gibson (1985) found useful. According to him, the content should:

- "• be seen to be relevant to the student;
- move from the known to the unknown;
- develop from the simple to the complex;
- develop from the concrete to the abstract;
- develop from particular to the general;
- commence with the whole, sub-divide into the parts and then resynthesize into the whole."

(Jarvis and Gibson, 1985, p.29)

However, the specific choice of content for any particular course still remains with individual educators. The following guides are suggested by Greaves (1987) about the content of nursing curriculum:

1 • knowledge of nursing should include both theory and practice as inter-supporting elements of the activity of nursing;

2 • nursing knowledge should include information, concepts, skills and practices that are relevant, useful and capable of being known and learned in order to have direct utility value for the practice of nursing;

3 • the knowledge included should be worthwhile and transferable to the nursing of patients;

4 • the developed knowledge included in the curriculum has to have consensus in the sense that it needs to be agreed and acceptable and wherever possible based on the best available evidence;

5 • the knowledge used in the curriculum should help to develop explanations or current practices, encourage critical analysis, influence problem-solving and help to establish in the students abilities to develop scientific approaches of enquiry;

6 • the future preparation of nurse practitioners should be based on the use of knowledge through educational experiences that prepare the aspiring nurse for knowledge creation and innovative nursing practice.

Different approaches of organisation of the content in curricula are the collection and integration which are described by Bernstein (1971). In a 'collection' curriculum, subjects are taught as separate, isolated entities with clear-cut boundaries and the emphasis is on depth. In contrast, 'integrated' curricula focus on common themes that unite various subjects and the emphasis is on breadth of coverage.

Quinn (1988) exemplified two kinds of organisation of the content in nursing:

"Collection curricula are typified by timetables containing slots with separate subjects such as 'anatomy' and 'physiology', 'psychology', etc.

Integrated curricula, on the other hand, go in for themes such as 'the individual in pain', etc."

(Quinn, 1988, p.262)

It is necessary to review frequently the nature of the content for the curriculum of nursing. Greaves (1984) emphasized that the content must increasingly be fully representative of the present state of the developments in nursing knowledge research and theoretical advancements.

"Design, development, and evaluation teams should ensure that the content of the curriculum is directed at the production of a professional nurse practitioner and that the student is given an educational experience as well as an occupational preparation, and that the experience is more than simply a rite of passage to registration as a nurse."

(Greaves, 1984, p.34)

4.73 Methodology of Curriculum Teaching is much more than simply instructing students or transferring formal knowledge and information to them, and learning is much more than simply listening to the teacher and attempting to absorb these things. In nursing education the clinical settings and the formal learning environment of the classrooms are both complementary aspects of the total learning arena of the curriculum and each must receive the same emphasis as focal centres of learning for students of nursing. Within the clinical learning environment, contact with the patient is the most desirable of the learning opportunities available to the student which is needed to be seen as the major focus of the curriculum in the wards and departments. Nursing knowledge and skills cannot be learned by pure theories in a classroom.

They are related to a profession which are manifested in the wards. The technology and equipment of wards and departments are also the essential learning resources for the students. As clinical areas become increasingly specialised, it is necessary for students to become familiar and competent with the equipment and technology that they meet within a specific period of clinical experience.

Therefore, a variety of teaching methods should be used by nurse teachers for a better learning. Some of the reasons are:

- "• not all students learn efficiently by the same methods and so there is always a risk of discriminating against certain students;**
- not all methods interest students equally;**
- no single method is better than another for all types of content;**
- not all methods provide for attainment of a particular set of instructional objectives."**

(Marsh, 1992, p.93)

Learning situations of adults are different from children. Adults learn according to their needs and with varied strategies but it does not mean that the process of learning by them is out of a discipline or control. Different kinds of teaching methods of nursing which are suitable for nursing students as adult learners are suggested by Greaves (1984):

- "• Talk;**
- Lecture and lecture variations;**
- Role-play simulation;**
- Individualised and independent learning;**
- Demonstration,**
- Discussional approaches (small group, teacher led and student led, group tutorial, seminar, larger group, symposium, panel-type seminars, workshop groups, nursing care study groups, clinical group conferences)."**

(Greaves, 1984, p.79)

The methodology of the curriculum should be in such a way that create the best conditions in which both teaching and learning be fulfilled in their best appropriate manner.

"Methodology includes the selection and arrangement of learning opportunities and the design and use of both teaching and learning strategies which are required to facilitate learning. It also includes the materials used to enable learning and the relationship of the actual methods to the knowledge and skills which we wish the students to learn. The different ways in which knowledge can be presented and the consideration of particular learning theories and teaching style are all important elements of the methods component."

(Greaves, 1987, p.6)

A teacher has to make many decisions about the methods and the ways of teaching. Some of these decisions may be made for teachers by others via official syllabus documents, teacher guides, textbooks. But, it is the teacher who is the ultimate implementer of those decisions.

Teaching method has two aspects for organizing the content. Marsh (1992) described the imparting aspect as the tendency of teachers for using a particular method of teaching. Usually teachers use conventional methods that are very familiar to them, perhaps even ones that were commonly used on them when they were students at school. Method of organizing the content comprises how subject matter is organized for teaching and learning. It depends very much on one's philosophy of what counts as important knowledge.

Despite controversy in learning theory and in the application of

that theory to the real teaching situations, there are some generally agreed principles which the curriculum should take account of with respect to the validity of methods and their suitability to fulfil learning requirements. However, the teacher's own philosophy and experience in teaching adults will influence the methods utilised. But, as Jarvis and Gibson (1985) stated, the learning objectives, the content and the situation are the other considerable constraint upon the methods finally selected.

4.74 Evaluation of curriculum The two similar terms are applied frequently in education: evaluation and assessment.

"The term 'Evaluation' means to place a value upon so that in the educational context it tends to be restricted to curriculum development, while the word 'Assessment' usually refers to the process of appraising students' abilities. 'Curriculum evaluation' involves an examination of the appropriateness of the aims, objectives and content and of the effectiveness and appropriateness of the methods employed."

(Jarvis and Gibson, 1985, p.30)

The fourth component of the curriculum, "Evaluation of the nursing Curriculum", is the main purpose of this study and will be explained more in the following chapter.

4.8 Principles of Curriculum Planning There are many ways in which curriculum-planning may be approached. The various kinds of subject-matter and of teaching methods require different techniques for planning. The five common but informal categories of curriculum planning stated by Barnes (1982) are as:

- content- based planning,
- concept-based planning,
- skills-based planning,
- problem-based planning,
- interest-based planning.

A complete procedure of designing a curriculum of nursing is provided by Burrell et al (1988). They have cited the outline of the procedure as following:

- "• defining the nature of nursing: a 'philosophy';
- choosing a nursing model to refine and reflect the philosophy of nursing;
- applying the Nursing Process concept to stabilise the philosophy;
- listing the tasks of nursing as it has defined;
- defining the nature of education for nursing: another 'philosophy';
- defining the categories of knowledge, attitudes and skills available in an educational process;
- specifying appropriate knowledge, attitudes and skills and educational exercises for each nursing task;
- allocating subject content and methods of learning, teaching and assessing to lesson units;
- validating, presenting and implementing the completed curriculum;
- reviewing, revising and re-validating the curriculum: evaluation."

(Burrell et al, 1988, p.6)

For implementing the above procedures, Torres and Stanton (1982), suggested four general stages which are:

- **The directive stage:** the beliefs, knowledge and concepts that form the basis of the curriculum are identified in this stage. The systematic gathering of information from the literature and also the

exploration of common beliefs about the nature of nursing are provided. This leads to a statement of the philosophy of the curriculum which influence each stage of the curriculum process. The specific meanings of the key terms are needed to be spelled out in a glossary so that everyone can see the way in which each particular term is interpreted.

- **The formative stage:** at this stage, the overall design of the curriculum which should reflect the philosophy and the nature of nursing takes shape. Objectives will be written for specific levels within the course and overall course objectives. Content-mapping is used to select content elements for each aspect of the course and also gives staff and students an indication of the sequencing of topics.

- **The functional stage:** this is the stage in which the curriculum begins to assume a more practical form. Consideration is given to approaches by which the content can be organised and the notion of models of nursing is employed. The variety of teaching methods and learning experiences both classroom and clinical situations is also decided.

- **The evaluative stage:** this can only occur when the curriculum is fully implemented and is thus a summative evaluation. There are three aspects for this stage: Input evaluation; Throughput evaluation; Output evaluation.

Evaluation therefore comprises an important role in the development of a curriculum.

4.9 Curriculum Planning Group There are two systems for curriculum development: Centrally-based and School-based.

- **Centrally-based curriculum development:** as Marsh (1992) believed, this kind of curriculum planning refers to an educational system making decisions about what is to be taught, and often how it is to be

taught and how it is to be assessed. Large scale curriculum projects are typically developed centrally. They are often termed generic, because their locus of operation is large scale, at the state or national.

The personnel who make these curriculum decisions were up until recent years, e.g. senior administrators or senior academics/project directors, but they are now, increasingly, politicians.

• **School-based curriculum development (SBCD):** there have been variations in terms used such as 'school-focused' rather than 'school-based'. Skilbeck (1984) stated that definitions of SBCD reflect, to a large degree, the predispositions of the respective authors. For example, the planning, design, implementation and evaluation of a programme of students' learnings by the educational institution of which those students are members can be interpreted as school-based curriculum development.

A number of problems that teachers and principals experience in undertaking SBCD activities as Marsh (1992) has listed include:

- **lack of time: to plan, to reflect, to develop curricula;**
- **lack of expertise: knowledge, understandings, skills;**
- **lack of finance: for materials, for teacher relief days;**
- **externally imposed restriction: by employers, parents;**
- **a threatening school climate: numerous resisters, lack of effective leadership."**

(Marsh, 1992, p.131)

The first step in developing a new curriculum is to set up a specific group to develop a curriculum. The composition [of them] is of paramount importance and should contain representatives from all major group of nursing staff who will be affected by the new curriculum.

Quinn (1988) emphasized the appropriateness of the size and

representativeness of the curriculum development group.

"There is obviously a delicate balance between representativeness and group size; too large a group may impede the planning process, but if some groups are not represented, this could lead to major problems when implementation occurs. One of the crucial factors to be considered when deciding upon the constitution of the group is the eventual acceptability of the new curriculum. It stands a much greater chance of being accepted if the various nursing staff feel that it is theirs, rather than feeling it has been devised by some elitist group and then foisted off on them."

(Quinn, 1988, p.256)

Oliver and Endersby (1994) described the qualification of the curriculum planning group.

"The individual who is asked to participate in the curriculum planning group should ideally not only have a good idea about what is to be achieved in terms of content, but also should have a knowledge of the teaching strategies being utilised, the curriculum models being used and perhaps most importantly of all, an understanding through participation of the philosophy of the planning team towards the education of the individual."

(Oliver and Endersby, 1994, p.121)

About composition and number of the curriculum development group, Burrell et al (1988) stated that the team should be representative of all the staff and student hierarchies in the nursing, medical and paramedical sectors as well as including selected members of the teaching staff of the school concerned and such specialists as post-basic tutors, librarians and allocation officers. He believed that ten persons are an optimum number

for the team in most circumstances. This number is small enough to permit the members to confer effectively in committee and to acquire mutual empathy, but large enough to be split up occasionally into specialised sub-groups with delegated responsibilities and also to maintain the momentum of the work through the inevitable absences of members on other duties or because of illness.

Quinn (1988) suggested invitation of external personnel from other institutions to join the group. This may offer a fresh perspective uninfluenced by the day-to-day concerns of the health-authority staff. It is important that this invitation should be seen as a positive experience rather than a time consuming chore.

Oliver and Endersby (1994) suggested that the curriculum planning process is not an activity confined to one small group, but rather it is a process which must include all those involved in the learning process, and this should have implications for in-service and post-basic education as well as the links between the nursing faculty and the clinical area. The first duty of the group is to establish the 'structures' and 'processes' of the group. This aim is facilitated by a secretary who takes minutes, and records the exact nature of the initial brainstorming sessions, otherwise many creative suggestions can be lost. Flow of information to group members is of paramount importance, so copies of the minutes need to be circulated as soon as possible after each meeting to allow members to prepare for the next one.

"At the initial meeting, decisions need to be taken with regard to the frequency and duration of meetings; weekly meetings give a sense of urgency, but it is difficult to do much useful work between meetings. It is also depends upon the time-scale for production of the submission document; meetings every two or three

weeks should be sufficient for planning a curriculum over the course of a calendar year. Monthly meetings tend to lead to loss of impetus and the evaporation of the necessary sense of momentum."

(Quinn, 1988, p.257)

Finally, as Quinn (1988) emphasized, the in-service education for the staff who will be participated in the new curriculum is very important. They should have instruction in order to collaborate with the new curriculum. Therefore, whilst the curriculum group is developing its work, there needs to be a parallel development with the in-service training department to plan for the staff. Opportunities must be made available for such staff to spend time in workshops and study days that relate to specific aspects of the new curriculum.

4.10 Models of Curriculum Every decision and judgement about the scope and nature of the curriculum depends on the choice of the curriculum model.

"The term model is a representation of reality, to enable us to understand something in real life. Models are used in curriculum design to provide a structure enabling coherent development. Normally nurse education is based on an adaptation of a model developed in the general education system."

(Bradshaw, 1989, p.67)

A model is a representation of something. There are several curriculum models available, but no single model is best and nurse educators must consider a variety of variables. In general, main models of curriculum are listed by Allen and Murrell (1978) as follows:

- The Product Model or Behavioural-Objectives Model;

- The Process Model of Curriculum;
- The Cultural-Analysis Model of Curriculum;
- Other Models and Approaches to the Curriculum.

4.101 The Product or Behavioural-Objectives Model This is the oldest and also the most well documented approach to curriculum development. However, this model is usually ascribed to Tyler (1949) but Wells (1987) believed that, in fact, it was introduced in curriculum development by Bobbit (1918) in the United States. The model uses and emphasizes the drawing up of prescribed objectives as an essential initial stage in development. It was elaborated by Tyler (1949) who articulated a rationale for effective curriculum.

"Education is a process of changing the behaviour patterns of people. This is using behavior in the broad sense to include thinking and feeling as well as overt action."

(Tyler, 1949, pp.5-6)

At the beginning of his book, he identified four fundamental questions to be answered in developing a curriculum. These questions are the basis that later have built the main framework of concepts of curriculum by him and the other educationalists and led to the generic model of curriculum.

- What educational purposes should the school seek to attain? (aim of curriculum)
- How can learning experiences be selected that are likely to be useful in attaining these objectives? (content of the curriculum)
- How can learning experiences be organised for effective instruction? (methodology of the curriculum)

- How can the effectiveness of learning experiences be evaluated?"
(evaluation of the curriculum).

As Crotty (1993) stated, this utilization of a behavioural approach was supported by the General Nursing Council (GNC) in 1977, when training schools decided to produce learning objectives for each area of clinical practice. From that time on, every school of nursing devoted considerable time and effort in stating the objectives to be achieved by each learner, during each module of their training, and the conditions under which they were to be achieved.

The emphasis on this model is on the achievement of objectives by the student. In other words, it is an output model. Quinn (1988) described the effects of the Tyler's opinion on the works of the other authors who developed the model which remained as a predominant pattern in education for many years.

"Tyler (1949) stressed the importance of stating objectives in term of student behaviours. This emphasis on student behaviours was taken up by other proponents of the model and led to a move to limit behavioural objectives to observable, measurable changes in behaviour, leaving no room for such things as understanding or appreciation. The behavioural-objectives model has influenced education throughout the world; indeed, in 1977 the General Nursing Council for England and Wales issued a curricular, which espoused the behavioural objectives model for nursing curricula and by the early 1980s, such objectives were almost universally applied in both classroom and clinical setting."

(Quinn, 1988, p.236)

In order to use the objective model precisely and because of the

complexity of formulating objectives and also the recognition that learning did not simply relate to the acquisition of knowledge, Benjamin Bloom and colleagues developed a taxonomy of educational objectives. Bloom (1956) suggested three major spheres or domains of learning and each of these is further categorised according to level of behaviour, progressing from the most simple to the highly complex.

The first related to knowledge and intellectual functioning, which they referred to as the cognitive domain. The second related to attitudes, values and feelings. This being referred to as the affective domain, and the last related to the development of motor skills and the psychomotor domain. The taxonomies produced for each domain identify levels of behaviour moving from basic to complex responses.

The objectives model was set up primarily to focus on outcome behaviours and it was a logical progression to attempt to measure and quantify these outcome behaviours.

"This model can provide a useful guide to the drawing up of objectives for a nursing curriculum and more specifically for subject areas within the curriculum. Objectives provide a firm basis for the assessment of learning, and also the evaluation of teaching. They are seen as useful in promoting clear thinking and unambiguous communication between teachers. If learners are made aware of the objectives, as many consider they should be, it provides them with a guide to what should be learnt and thus facilitates self-directed learning."

(Cork, 1987, p.20)

The model of scientific experimental evaluation relies heavily on quantifiable outcomes. Kenworthy and Nicklin (1989) commented on this

model and prescribed it as a proper model for nursing.

"A course employing the model will have very specific behavioural objectives which can be readily tested, and is likely to be based upon a cognitive taxonomy of educational objectives. Such a model would have a use in course that were heavily product-oriented and qualitative values had low importance. A model of this type is feasible in nursing education. A complex system of cross-referencing can link each of individual skills to a particular behavioural objective which can then be tested. The result have to be validated against a control group of students on a course that did not use this particular approach."

(Kenworthy and Nicklin, 1989, p.125)

As Oliver and Endersby (1994) stated, the system of behavioural objectives had uses in the skills training where, the outcome of learning was directly observable and, to a large extent, predictable. It attempts to dictate exactly what behaviours should result from a learning experience. They listed some of the advantages of this model of curriculum planning as follow:

- "• Provides clear guidelines for students;**
- Makes lesson planning easier;**
- Facilitates use of terminal examination;**
- Easier to plan for experiences;**
- Comparison of student achievements is possible;**
- Effective in skills training;**
- Economical in terms of time;**
- Outcomes are measurable;**
- Makes the comparison of different courses possible;**
- Popular with students."**

(Oliver and Endersby, 1994, p.126)

Despite the wide influence of the behavioural objectives model in the

design of curricula, it has been the subject of considerable criticism in the literature. Wells (1987) believed that critiques of the objectives model began in the late 1960s. By 1971 in the U.S.A. something of a campaign against behavioural objectives in education began. In England Macdonald-Ross (1973) and Stenhouse (1975) articulated critiques of the objectives model. Several others have since joined in the attack. One of the important criticisms is described by Davis (1987):

"The objectives approach may lead to an emphasis on trivial learner behaviours because these are the easiest to express as objectives. Potentially more important educational outcomes will therefore be ignored because by their abstract nature they are difficult to articulate in the form of objectives."

(Davis, 1987, p.20)

The most fundamental criticism that has been levelled at this approach to curriculum planning is stated by Blenkin and Kelly (1981):

"It attempts to reduce education to a scientific activity, analogous to the processes of industry, commits it to a view of man and of human nature that many people find unacceptable and even unpalatable. For to adopt this kind of industrial model for education is to assume that it is legitimate to mould human beings, to modify their behaviour, according to certain clear-cut intentions without making any allowance for their own individual wishes, desires or interests."

(Blenkin and Kelly, 1981, p.75)

Another criticism described by Davis (1987) who stated that teachers may find themselves constrained by the objectives and unable to respond spontaneously once objectives have been specified:

- when students' learning needs appear to be at variance with these;

- when topics are raised for discussion by the students which are not seen as of relevance to the stated objectives. Formulating meaningful objectives in relation to all learning experiences is another difficulty. Many in the field of education consider the formulation of objectives to be a time-consuming academic exercise of little value in relation to the everyday world of the teacher. In general, Davis (1987) believed this approach as undemocratic because, it plans in advance precisely how the learner should behave after instruction.

The behaviourist view of human beings, and the behavioural objectives model of curriculum have been examined and rejected. Both views are philosophically and psychologically unsound and anti-humanistic according to Lawton (1989).

"The behavioural objectives approach can only be applied to certain kinds of skills, not the whole curriculum. The behavioural objectives view of curriculum is that of a closed system, whereas in a democracy individuals need to become autonomous by means of an open-ended curriculum. One of the purpose of the curriculum is to encourage "tolerance of ambiguity and uncertainty" rather than simply "knowing the right answers". Curriculum planning needs to maintain a distinction between education and training, although the school curriculum will include many kinds of useful training. It is impossible to begin a process of curriculum planning by making a list of statements of objectives; curriculum planning has to begin a means of justifying value-choices."

(Lawton, 1989, p.15)

4.102 The Process Model of Curriculum The criticism of product model led to another model of curriculum which is known as the process model. This model appears to have begun to be formulated in the

late 1950s. This approach focusing on procedures, concepts and criteria, is referred to the process model by Stenhouse. This is because it is concerned with the value of the purpose of the process of learning and the learning experience itself rather than with a specific achievement outcome. It is also concerned with the intrinsic value of knowledge rather than simply its extrinsic worth. Stenhouse (1975) saw the use of behavioural objectives acting as a filter that distorted knowledge in schools.

"The filtering of knowledge through an analysis of objectives give the school an authority and power over its students by setting arbitrary limits to speculation and by defining arbitrary solutions to unresolved problems of knowledge. This translates the teacher from the role of the student of a complex field of knowledge to the role of the master of the school's agreed version of that field."

(Stenhouse, 1975, p.86)

He believed that, it was possible to organise the curriculum without having to specify in advance the behavioural changes that should occur in students. Indeed, he argued that the purpose of education was to make student outcomes unpredictable. The content of a curriculum can be selected on the basis that it is worthwhile in itself and not merely as he means to achievement of a behavioural objective.

Despite the advantages of the process model, there are some disadvantages in this model which could be listed as:

- "• May be very time consuming,**
- Teacher loses control of the learning experience,**
- Difficult to maintain a national standard,**
- May be too unstructured for some students,**
- Uneconomic,**

- Impossible to compare students,
- Incompatible with a final examination,
- Does not assist the poor teacher,
- Difficult to plan,
- Difficult to assess objectivity,
- Unpopular with some students."

(Oliver and Endersby, 1994, p.127)

The most common reservation expressed in nurse education with regard to the process model centres on the issue of evaluation. For example, Quinn (1988) asked: "If no terminal behaviours are prescribed, how can the teacher assess whether a student is competent or not?" (p.251).

4.103 The Cultural-Analysis Model It was developed by Lawton (1983) as a reaction against what he saw as the danger of the behavioural objectives model.

"Any society has the problem of transmitting its way of life, or culture, to the next generation. Education is concerned with making available to the next generation what we regard as the most important aspect of culture. In order to plan a curriculum based on a reasonable or a justifiable selection from culture, however, it is necessary to have a process or set of principles by which it can be seen that the selection from the culture is made. That process will be referred to as cultural analysis."

(Lawton, 1983, p.25)

In attempting to see how the curriculum in a society is derived from the unique culture of that society, it will sometimes be necessary to ask detailed questions about knowledge, skills, values, and so on. Lawton (1983) continued:

"There will always be more to a culture than a list of

its measurable features. Some aspects of culture can be measured (e.g. some of the most important economic features in advanced industrial societies), but observers should beware of the temptation to measure what is easily quantifiable and then being dominated by these measurements. Cultural analysis is more complicated than manpower planning."

(Lawton, 1983, p.28)

Much of cultural analysis is at the level of description. Therefore, he proposes an eclectic system of cultural analysis which will make use of what is measurable when it is relevant, but will look for major categories and parameters within which to operate both quantitatively and interpretatively.

Quinn (1988) concluded that although the model applies to the curriculum for children, it is a useful way of thinking about curriculum design in nursing. The model attempts to apply a rational system of analysis to the problem of curriculum content.

4.104 Beattie's Fourfold Model This recent approach to curriculum planning is the basis of **Project 2000**. The Project was begun in October 1989 and the first students graduated in October 1992 (Sconce and Howard, 1994). Drawing upon his experience with nursing curricula, Beattie (1987) suggested a combination of four fundamental approaches to the task of planning a curriculum for nursing. They are the curriculum as:

- a map of key subjects;
- a schedule of basic skills;
- a portfolio of meaningful personal experiences;
- an agenda of important cultural issues.

Each of these approaches has strengths and weaknesses which complement

one another. Beattie discussed that there are three ways of combining the fourfold framework. In the first one, the 'eclectic curriculum', the four approaches are mixed together in some sort of combination. The main problem with this is that the more traditional approaches tend to dominate, leaving only the marginal inclusion of student-centred ideas. Another way is to negotiate each of the key areas with the consumers, the 'negotiated curriculum'. The third way, the 'dialectical curriculum', in which the curriculum designer 'goes out to do battle', as it were, to engage in a deliberate, principled and committed struggle to combat, challenge and contest the dominant codes of curriculum. In this fourfold model, curriculum planners in nursing can and must move beyond simple-minded, 'single-model' approaches and towards complex, multifaceted strategies.

Finally, in regard to the nursing curriculum development, it is worthy to mention the statement of Wells (1987) who stated:

"As in many situations in life, the values of eclecticism and flexibility have much to commend them. In nursing education there is a strong case to be made for a combined curriculum model which utilises the objectives approach and identifies product as well as recognising the importance of process."

(Wells, 1987, p.192)

4.11 Summary: this chapter provided some evidences to indicate relevance literature by describing the current state of knowledge on the curriculum. It also included what the educationalists have written about the different aspects of curriculum from its history to definitions of it, several components of a curriculum, the models of developing it, etc. Hence, it has been a source for research ideas, orientation to what is

known, defining a conceptual context, defining the variables, and finally guiding the design and methods which were applied in this research.

PART THREE - CONCEPTUAL FRAMEWORK

CHAPTER FIVE: CURRICULUM EVALUATION

5.1 Introduction Curriculum evaluation is a complex but integral component of a nursing education programme. It is an ongoing process of collecting and describing data which provides the basis for decision making. Evaluation of nursing curricula has become a major concern of nurse educators in recent years. It is closely linked to curriculum development and therefore can involve a process of continuous change, assessment of nursing content taught in each course, course objectives, teaching strategies, course evaluation methods, and the relationship of life and science courses related to nursing to the overall plan of study.

5.2 History of Curriculum Evaluation Travers (1978) described a brief history of curriculum evaluation. He stated:

"The movement of curriculum evaluation started by Ralph Tyler in the early 1930s was quite short lived. It failed to live up to the expectations that it would lead to an orderly improvement in educational practice through the use of research methods.

The new era of evaluation studies begun in the 1960s attracted a new generation of research workers, few of whom had been associated with the evaluation movement of the 1930s."

(Travers, 1978, pp.219-20)

5.3 Definitions of Curriculum Evaluation There are different definitions of evaluation which emanate from different dimensions of the curriculum evaluation. The Australian Curriculum Development Centre

(CDC, 1977) Study Group on curriculum evaluation adopted a definition that highlights the function of evaluative information in assisting decision-making:

"Evaluation is the process of delineating, obtaining and providing information useful for making decisions and judgments about educational programmes and curricula."

(CDC, 1977, p.24)

However, according to Kemmis (1982), a desirable definition of evaluation will acknowledge the mutuality of relationship between evaluation and curriculum development and its continuous, organic and reflexive contribution to thought and action about a curriculum. Hence, evaluation is the process of marshalling information and arguments which enable interested individuals and groups to participate in the critical debate about a specific programme. Lawton (1983) described this dimension of evaluation as following:

"Evaluation is essentially concerned with supplying information about the success or failure of a teaching-learning situation, whether it is feedback of marks to students after a test, or a teacher coming to a conclusion about the need for a new approach next year, or most complex of all, the formal, written report on a new curriculum project to those who provided funds for it."

(Lawton, 1983, p.90)

Another definition which emphasised on indication of perceived merits and shortcomings stated:

"Evaluation is the discovery of the nature and worth of something. In relation to education, we may evaluate students, teachers, curriculums,

administrators, systems, programmes and nations. The purposes for evaluation may be many, but always evaluation attempts to describe something and to indicate its perceived merits and shortcomings. Evaluation is not a search for cause and effect, an inventory of present status, or a prediction of future success. It is something of all these but only as they contribute to understanding substance, function and worth."

(Stake and Denny, 1969, p.370)

Finally, The English National Board for Nursing, Midwifery and Health Visiting defined evaluation as:

"The collection and use of information in order to make decisions about an educational programme."

(ENB, undated, cited in Bradshaw, 1989, p.106)

5.4 Characteristics of Curriculum Evaluation From the viewpoint of Greaves (1987), curriculum evaluation has many functions including: judgement, decision, improvement, determination of achievements and so on.

"Curriculum evaluation is concerned with attempts to judge the value, worth, quality, and effectiveness of the curriculum. Following the systematic collection of data and information, judgements and decisions are made in order to improve the curriculum in the light of the available information. It includes determining the extent to which intentions and purposes have been realised, and outcomes achieved. It also provides evidence regarding the learning achievements of the students and the degree of success of the planned learning experiences. Evaluation is similarly directed at the effectiveness of teacher performance, and the management and organisation of the curriculum."

(Greaves, 1987, pp.87-8)

Aubrey (1988) raised a number of questions which are relevant to every evaluation programme. They are:

- Who is the evaluator?
- What is being evaluated?
- Who or what is the target group?
- What are the evaluation task?
- What is the cost?
- Is the evaluation relevant or feasible?
- How will it be evaluated?
- Who trains the evaluator?
- Who evaluates the evaluator?
- Who will have access to the evaluation report?

Here some of the above questions will be discussed.

5.41 Purpose of the Evaluation From the viewpoint of Rossi and Freeman (1993), evaluations may be undertaken for a variety of reasons: for management and administrative purposes, to assess the appropriateness of programme changes, to identify ways to improve the delivery of interventions, or to meet the accountability requirements of funding groups. They may be undertaken for planning and policy purposes, to test innovative ideas on how to deal with human and community problems, to decide whether to expand or curtail programmes, or to support advocacy of one programme over another. Finally, they may be undertaken to test a particular social science hypothesis or a principle of professional practice.

Nisbet (1988) believed that the purposes of the evaluation depends upon the different interpretations of the word "evaluation".

"Someone see it as primarily associated with innovation. Others, relate evaluation to testing (either to monitor standards of academic performance as a measure of the efficiency of the educational system, or to identify the specific difficulties and needs of individual students). It could be also interpreted as a form of accountability that is an instrument of management and control. Finally, it is an integral part of the professional role and an essential element in professional development, enabling teachers to improve the quality of teaching."

(Nisbet, 1988, p.1)

Heywood (1984) argued about the importance of finding of evaluation and of judgement on its relationship to the real world of a school.

"By questioning the value of aspects of schooling, it has entered a field in which it is not always sure of its responsibilities. Because of this, evaluators have readily pretended to value-free positions in an attempt to escape the consequences of their own judgements. Yet whether they wish it or not, they are involved in commentaries which reveal what they believe to be 'good' and 'bad' practices in education. Therefore, there is so much confusion about the purpose of evaluation and that often the findings of the evaluators do not relate to the 'real world' of the school and classroom."

(Heywood, 1984, p.149)

What are the intentions and motives behind the evaluation? This is a worthwhile question which is asked by Green and Stone (1977) and the answer to this question gives special implications to the evaluations.

"Some of the uses of the evaluation's intention include: to measure (test), to prove (present evidence), to improve (change), to judge (determine value), to advocate (take a position), to illuminate (discover facts or 'the truth') that it may, at differing

times, be some or all of this things depends to a certain extent upon the people to whom it is addressed, or, in some cases, who have requested it, for example the policy makers, the teachers, the students."

(Green and Stone, 1977, p.4)

In fact, the purposes of evaluation of particular curricula may vary, but one can generalise about the range and nature of the purposes. The main purposes of curriculum evaluation from the viewpoint of Wells (1987) are:

- "• to construct and interpret a reasonably clear overall view of what happened in a learning programme, and to compare this with curriculum intention;**
- to identify relative strengths and weaknesses as a basis for further curriculum development;**
- to identify changes in learner abilities arising from their curriculum experiences;**
- to determine the effectiveness of the curriculum in preparing learners to undertake particular functions;**
- to delineate accountability of teachers and educational managers;**
- to aid management decision making about justification of resource expenditure."**

(Wells, 1987, p.183)

In general, there are a number of contexts in which evaluation is perceived to have a role. McCormick and James (1983) suggested that in various forms, evaluation might have several purposes: provide a mode of accountability, promote professional development and institutional improvement, and facilitate curriculum review. A strategy that satisfies one purpose may not necessarily satisfy another purpose. If this is so, it is necessary to consider whether it is possible to provide a general definition of what evaluation is for.

5.42 What or Whom is to be Evaluated? Bradshaw (1989) stated that everybody is tempted to say that everything should be evaluated in education. But this would do little other than to emphasize the point that any aspect of an educational experience that contributes to, or detracts from learning is the legitimate concern of educational evaluation.

"Evaluation can, and should take place at different levels of specificity. At the macroanalytic level evaluation is concerned with an analysis of the value of the curriculum overall. At the microanalytic level individual teachers or supervisors might be concerned with evaluating the success of a single teaching session or a period of observation, practice or reflection in the clinical setting. Between these two extremes lies a range of areas for consideration in any evaluation exercise."

(Bradshaw, 1989, p.109)

A range of possibilities for this question are also expressed by Allen and Murrel (1978) who stated:

"It might be asking 'is the content appropriate, relevant, up-to-date?' It might be evaluating the students according to criteria in a number of aspects of the professional task. These might be able to be divided into tasks related to the hospital and those related to the school (the old practice-versus-theory split), or it might be argued that the only sensible way to view the skills of the student is as a whole and that such divisions are nonsensical."

(Allen and Murrel, 1978, p.13)

It seems that in educational evaluation the answer to the question who or what should be evaluated, depends on many factors particularly financial and manpower resources. For instance, when a national curriculum is

evaluated it is necessary to examine all influential issues regarding the importance of extensive effects of the programme. In this case, the sponsor would provide financial support that is helpful but not enough. Overall, in order to respond to this question, a list of important issues should be prepared in each evaluation programme. Some of the effective elements in evaluation of nursing education are:

- the purpose of evaluation (as the last stage of curriculum development, quality assurance, accountability, and so on),
- resources and facilities (financial support, trained manpower),
- level of evaluation (institution, assessment of students, etc.),
- field of evaluation (theory and practice, classroom and ward),
- time of evaluation (cross-sectional, longitudinal).

5.43 Who Evaluate? Wells (1987) pointed out the persons who would be responsible for educational evaluation. He nominated them as outsiders, insiders and a combination of both of them. Curriculum evaluation can be undertaken entirely by 'outsiders', that is by people not on the staff of the teaching institution or by 'insiders', teachers, educational managers and the learners who constitute the decision makers and participants in the educational process itself. A third situation is a combination of both inside and outside evaluators.

From the viewpoint of Rotem and Bandaranayake (1983) all educators have a role to play in the planning and managing of evaluation. Individual lecturers should seek information to support the decisions they make. When the programme to be evaluated concerns more than one teacher, it is necessary to appoint a coordinator from among the staff, or an external evaluator. Who is the best person for evaluation of a programme, insider or outsider? They believed that it depends on many

factors.

"Such factors as familiarity with the programme conditions and aims, accessibility to sources of information and high commitment favour an internal evaluator. On the other hand, relative objectivity, availability of external standards and specialist expertise in conducting evaluation may favour an external evaluator. The need and purposes of the evaluation should be carefully considered and balanced against the benefits and limitations of each approach. It is often useful to combine the perspectives offered by internal and external evaluators."

(Rotem and Bandaranayke, 1983, p.128)

Hammersley (1993) argued that educational evaluation should also be conducted by teachers in their classrooms and schools. This has been considered not as an extra activity which added to their teaching duties, but rather as a transformation of that duties. While the research conducted by a teacher might be useful, it is not an substitute for educational research of a more conventional kind.

Kelly (1977) had a similar idea and emphasized on the active role of teacher in curriculum evaluation and believed in the continuous involvement and responsibility of teachers as evaluators of the curriculum. This applies to teachers in both of school-based and centrally-based curriculum.

"There is a little doubt that the teacher is the person who possesses a good deal of the data the evaluator needs so that he or she must be seen as having an important contribution to make to evaluation at that level. Teachers should be as thoroughly and genuinely involved in the evaluation as they are, or should be, with the development of the material. They should not merely be asked to provide data, especially where this is mainly a form-filling

exercise, but should be involved in continuous discussion of the questions being asked. The effects of this are two-way. For in the first place the teachers develop the kind of understanding of the problems of evaluation that will make them better at providing appropriate data and, secondly, the evaluators can again insights that will lead to a better framing of questions."

(Kelly, 1977, pp.120-1)

The person responsible for the evaluation is the most appropriate one to criticise the success of the programme evaluation. Watson and Herbener (1990) mentioned that both insider (internal evaluator) and outsider (external evaluator) would have an important role in nursing education evaluation. Evaluation can be conducted by internal faculty or external evaluators. Evaluation is most relevant when it builds upon and involves the people who are directly and indirectly affected by its results. Nursing faculty should be highly involved in evaluating their programmes because it is a part of their academic responsibility. The staff of the faculty are the most knowledgeable persons about the success of their own programmes.

In the choice between an internal evaluator, who has personal knowledge through involvement, and an external evaluator who is uncontaminated, there are sound arguments on both side. Nisbet (1988) believed that in both situations it is important that all participants be involved in process of evaluation in order to ensure the implementation of its findings.

"Those who are the subject of evaluation should be associated in decisions about the design, conduct and interpretation of the evaluation. Evaluation should be a shared responsibility among those who commission evaluation, those who evaluate and those who are evaluated."

(Nisbet, 1988, pp.2-3)

Establishment of an educational post for curriculum study in each nursing faculty is suggested by many nursing authors. For example Kenworthy and Nicklin (1989) stated:

"As curriculum studies become an increasingly significant subject in schools of nursing, an appropriate response is to create a senior educational post to carry out this function: it is a vital developmental requirement in the management of nurse education today. The person who fulfills the role must, in addition to participating as a key member of the development team in relation to curriculum evaluation, be an adviser and resource on all curriculum matters. Such an appointment, however, must not cause other nurse teachers to abdicate the duty of keeping abreast of all curriculum developments and issues within nurse education."

(Kenworthy and Nicklin, 1989, p.136)

In other words, all the people involved in a course of education, both at the planning stage and during its implementation, ought to contribute to evaluation. As Kenworthy and Nicklin (1989) suggested, the principal participants in any nursing course are: the course teachers, the practical/clinical supervisors or mentors, the students themselves and, most importantly, the patients or clients and their relatives. In addition to these main participants, there are many secondary or supportive individuals who make an indirect contribution towards evaluation, either by being represented on the curriculum development team or through close working relationships with the key course participants.

5.44 What is the Evaluator's Role? In the literature, there is little explanation about the role of outsider evaluators, and most of the

written works are concerned to the manner of students' assessment. Indeed it seems that the role of outsider evaluators have less implication in higher education especially in nursing education or they are not attended by the authors enough. Therefore, the discussion will continue about insider evaluators' role only.

In each evaluation project, there are a wide range of various opinions about the purpose of evaluation, quality of achievement and role of the evaluators. Sources of these discrepancies includes:

"Difficulties must arise from the fact that different people will have different perceptions and conceptions of any project, so that each will emphasize different purposes, look for different kinds of data and make different interpretations of the evidence obtained. The fact is that the achievement of any kind of objective evaluation of a project will be far from straightforward, whatever the official view of its purposes is."

(Kelly, 1977, p.118)

Perloff (1979) is one of the authors who believed that the evaluator's role is not neutral and who should make judgements on the process of evaluation.

"Persons having the responsibility to evaluate some programme are expected to pass judgement on its worth and facilitation. At the moment of evaluation, their responsibility is not primarily responsibility to understand, nor a responsibility to discern the causes of some effect, nor to make a decision about that programme. The evaluation responsibility is a responsibility to make judgements. What is critical is that the evaluation specialist is to provide assistance to people, the constituents, who have the responsibility to make value-judgements."

(Perloff, 1979, p.55)

Although most of the specialists of evaluation have chosen not to judge in their evaluations, a group of educationalists such as Stake (1967) believe that the description is one thing and judgement is another thing, and a procedure can be considered as evaluation when it be accompanied by a judgement on the merit of the programme. They stated that there would be no evaluation until judgement has been passed. Meanwhile, another group of educationalists did not define the evaluator's role explicitly. In this regard Lawton said:

"Final task of evaluator as a judge is still vague, even amongst those supporting the new-wave of evaluation. There is however no agreement among the evaluators on whether evaluation should consist of observations being interpreted by the evaluator himself or whether the evaluators' role is simply to present data."

(Lawton, 1980, p.175)

In general, there are some differences between the role of evaluators in a summative evaluation and/or in a formative one. Herman, Morris and Fitz-Gibon (1987) described the responsibility of a summative evaluator. They stated that when the summative evaluator represents the interests of the sponsor and the broader community, he/she should try not to interfere with the programme. While the programme is running, the function of the summative evaluator is avoid working with the staff and refrain from any suggestion for improvements. He/she should collect data and write a summary report to show what the programme looks like, what has been achieved, and what implications and recommendations may be derived from to improve the future efforts and/or to inform the public policy.

In December 1972, in the Conference which took place in Cambridge, there was a general agreement amongst the participants on

the thrust of future evaluation practices. Whiteley (1992) stated that although there was not a complete agreement over the precise structure of a single model, the participants resolved that in future, evaluators should aim to produce responsive and flexible work that used observational data, and was applicable and understandable to those for whom the work has been conducted.

Perhaps the most realistic expression about the evaluator's role is described by Rotem and Bandaranayake (1983). They believed that it is not a fixed position and depends upon the situation and differs from case to case. Sometimes evaluators should judge themselves and sometimes the audiences make the decision. According to Rotem and Bandaranayake (1983):

"The role of evaluator is to help decision-makers (audience of the evaluation) in their quest for information. The specific tasks and responsibilities of evaluators may differ from case to case. In general, evaluators will proceed to the point of making recommendations concerning the programme, but will let the audience make the decisions. In cases where the evaluator is also the decision-maker, he or she will act upon the known findings. If evaluation findings are to be utilized they must be seen as relevant and credible by the potential users. To this end it is necessary to consult the users about the scope and method of evaluation.

In the absence of such involvement the users might not be committed to the evaluation and hence may be less inclined to incorporate the findings in their decision-making process. To avoid inappropriate expectations and disappointment, it is desirable to draw a clear and explicit contract between the evaluators and the audience. The terms of reference should specify the expected role of the evaluator, the

framework for consultation, the timing of each step and the expected outcome of the evaluation effort."

(Rotem and Bandaranayake, 1983, pp.129-30)

5.5 Types of Evaluation First of all, it must be distinguished that the evaluation of the curriculum itself is different from the assessment of the performance of individual students within the educational programme. Kelly (1977) insisted that these two are closely linked and interwoven and obviously, the assessment of the performance of the students is one major source of data in the evaluation of the curriculum. However, although many of the things that have been written about evaluation have tended to concentrate on the assessment of individual pupils performance, they are by no means the same.

Comprehensive evaluation of the curriculum is clearly desirable. For this reason, as Alexander (1983) described, a responsive procedure of evaluation is needed. She believed that traditional procedures of evaluation are no longer adequate. The dynamic changes occurring in higher education today have made it necessary to use a similar dynamism in designing evaluation procedures. Because evaluation procedures should be responsive to the changing needs of the situation, different types of evaluation policies should be considered.

In practice, whilst dichotomies are set up for purposes of describing the field of evaluation, actual evaluations tend to contain mixed approaches. According to the purpose of evaluation or even its sponsor, many approaches of evaluation can be adopted. As Kogan (1986) expressed:

"The mode of evaluation varies according to the motives underling it. For the most part, evaluation is likely to involve the notion of change. The evaluation may be called upon to make judgements about changes

already installed or changes in prospect or to ascertain whether changes are needed. The nature of evaluation will vary according to whether an intervention is primarily directed to, for example, improvements in quality, reduction in cost, equalisation of access, or improvement in working condition; and it will also vary according to its sponsor whether they be managers, political leaders, client groups, or the workers who are subject to the evaluation."

(Kogan, 1986, p.127)

Thus, it is possible to note several important dichotomies of evaluation, or ranges containing dichotomous extremes in the approaches adopted. Some of these dichotomies are: quantitative or scientific-experimental as against qualitative or non-controlled; formative as against summative, and process as against product related evaluation. Some common approaches of evaluation are described briefly as follows:

5.51 Scientific Approach Versus Illuminative Approach

The first group of distinctions are essentially concerned with the scientific base of the different approaches. There is the classic, experimental, 'scientific approach' which primarily depends upon the establishment of a strict control group against which comparative observation over time can be made. Thus, the nature of an existing state can be assessed, the effects of a clearly specified intervention can be evaluated and hypotheses tested. In contrast, as Kogan (1986) explained, this approach has been strongly challenged by 'illuminative' research. Illuminative approach emphasizes the importance of context, system and milieu from which the individual should not be divorced. Human nature is dynamic and cannot be pinned down. Subjective experience is both varied and important. It is therefore unrealistic to identify particular and finite numbers of outcomes of interventions. Nor should one generalise them. It will be readily seen that

such an approach would not sit easily with such calculated techniques as performance indicators.

5.52 Summative Approach Versus Formative Approach

These categories of evaluation were described by Scriven (1967) for the first time. Formative evaluation is just such feedback of evaluative information into a developing programme, or during the intermediate stage of the evolving of a new teaching strategy. Summative evaluation is for the assessment of a fully-operating programme in its entirety. Scriven also differentiated between the roles and goals of evaluation. Goals he saw as judgements of the worth or success of the programme in achieving that for which it was designed. However, in his opinion, evaluation did not end at that point, its results should be used to aid in decision-making, as to whether a programme or curriculum should continue, be changed, or cease. White (1983) contrasted the two approaches.

"The summative approach evaluates the effectiveness of a programme in terms of the end product. Summative evaluations that compare two curricula assume that the programmes remain basically unchanged during the data collection period. Formative evaluation provides for periodic data collection and feedback about segments of the curriculum or curriculum materials. It is used for ongoing evaluation and minor improvements that do not affect the integrity of the curriculum design."

(White, 1983, p.167)

A further useful distinction can be made between formative and summative evaluation. As Brink (1989) stated, although some programmes make use of both types, evaluative research is primarily concerned with summative evaluation. It is done after the programme is

over and attempts to assess how effective the programme was in meeting its objectives. Summative evaluation can be viewed in a vertical dimension. Formative evaluation provides feedback during the progress of the programme and is used to improve or modify its operation. It can be schematically represented in a horizontal dimension.

5.53 Product Evaluation Versus Process Evaluation This dichotomy was identified by Stufflebeam (1969) for the first time. It is related to whether the evaluation is directed to judgements on the quality of the process or of the product. Kogan (1986) described some of the Stufflebeam's viewpoints.

"If education is seen to produce important outcomes which are not easily measured or defined, evaluation is more meaningfully directed towards the processes of the education so that the satisfaction enjoyed, the experience received, and the style used, become more relevant."

(Kogan, 1986, p.128)

Instrumentation of the process evaluation is also expressed by Wells (1987). He believed that the documents are usually provided by the quality approaches.

"Process evaluation has often been carried out by outsiders, and impressions have been gained through interviews, the recording of discussions at evaluation meetings between teachers and students, and the analysis of the course documents. In many cases observations of the classroom events have also been made."

(Wells, 1987, p.191)

In fact, process evaluation is very useful for information gathering about a new curriculum, because it is a continuous, ongoing evaluation

undertaken as a programme, especially a new and innovatory programme is in progress, and providing feedback to the educator to enable her to adjust her teaching strategy or content if thought necessary. As Alexander (1983) concluded "its purpose is to facilitate prompt decision making" (p.63). Meanwhile product evaluation is concerned with outcomes. It measures end-products such as learning gains and should more appropriately be used when a programme is sufficiently developed to warrant testing. "Its purpose is to judge the efficiency and efficacy of a programme, and its use facilitate comparison of the outcomes of two different programmes"(p.63).

5.54 Instrumental, Interactive and Individualistic Evaluation A further distinction was made by Becher and Kogan (1978). They described the concept, its instrument and the evaluators' task.

"The instrumental style is employed by professional evaluators and aspires to impartiality and universality by using measures for comparison and control. In this it counts people as objects whose behaviour is in principle explicable in terms of a series of natural laws.

The interactive style is based on the anthropological paradigm and emphasizes the uniqueness and untidiness of educational contexts and those who work within them. This views people as social animals conforming to no absolutes and obeying their universal rules and incapable of being understood within their own terms. Individualistic evaluation is near to narrative history. It insists on the uniqueness of the particular instance. The evaluator's task is to create a careful case study. It may serve to point a moral but not to prove a rule. It is a romantic value position."

(Becher and Kogan, 1978, p.128)

5.55 Qualitative Approach Versus Quantitative Approach

Leininger (1985) compared the two approaches of evaluation. She described that qualitative studies tend to be hypothesis-generating rather than hypothesis-testing. Because they tend to be exploratory in nature, providing rich descriptive and documentary information about a topic or phenomenon. On the other hand, quantitative methods tend to be used to test hypotheses with the goal of explaining or predicting. They are needed when the researcher wishes to know how much, how often, be used to or to what extent a phenomenon is present.

From the viewpoint of Carr (1994), the strengths of the quantitative approaches such as descriptive, correlational, quasi-experimental and experimental research are that they provide sufficient information about the relationship between the variables under investigation to enable prediction and control over future outcomes. The strength of the qualitative approaches such as grounded theory and ethnographic research lies in the fact that it has an holistic focus, allowing for flexibility and the attainment of a deeper and more valid understanding of the subject than could be achieved through a more rigid approach.

"For a variety of reasons, qualitative study may be used as an important precursor to quantitative studies. The use of qualitative data generally means that the investigator has developed close personal relationships with subjects. Qualitative data also provide a generalized background for interpreting later statistical results. The statistical results should be compared with the qualitative data to discern if there is a 'fit' between the two data sets."

(Leininger, 1985, p.179)

Carr (1994) stated that to obtain a comprehensive understanding of a topic, qualitative and quantitative data sets should be combined. They may provide complementary data sets which together give a more complete picture than can be obtained using either method singly. Each has advantages and limitations; when fused, the positive aspects of both may be seen.

"Neither approach is superior to the other; qualitative research appears invaluable for the exploration of subjective experiences, and quantitative methods facilitate the discovery of quantifiable information. Combining the strengths of both approaches in triangulation, if time and money permit, is also proposed as a valuable means of discovering the truth about nursing."

(Carr, 1994, p.716)

It is important to stress that these artificial divisions between types of evaluation must not be overstressed, much less the types thought to be alternatives; neither is one type more important than other. Harlen (1971) emphasized that the different approaches of evaluation may all be relevant to a programme of curriculum revision at one or another phase of its development. It is essential that any type which is relevant be used at appropriate time.

5.6 Classification of Evaluation Models The past thirty years have brought major changes in the field of general education especially curriculum evaluation. Sohn (1987) mentioned:

"Since the late 1960s, many educational writers have developed evaluation models for the purpose of proposing different ways of conceptualizing the manner in which systematic educational evaluation

should take place. Most evaluation models cover a wide range of evaluation variables to study the many facets of education. They provide a framework that has input and process variables in addition to outcome variables in part because of their emphasis on the role of evaluation for the improving programmes."

(Sohn, 1987, p.27)

From the viewpoint of Travers (1978) the models are the end products of the thought that has focused on the problem of conducting evaluation studies. Most of these models do not represent procedures that have proved producing useful results.

As Whiteley (1992) emphasized and studying of the literature indicates:

"We can see how evaluation has developed as a discipline from a strong behaviourist code of practice to a more investigative and less prescriptive approach. This is valuable in the context of education since there are many variables that can affect the outcome for any individual, both in the context as well as the content of a programme."

(Whiteley, 1992, p.315)

It therefore seems that a brief review of the history of the models of curriculum evaluation is useful. Greaves (1984) explained the history of the models of educational evaluation that:

"Early models of evaluation were generally concerned with quality control and emphasized the need for feed-back to improve courses. Course developers sought two types of feed-back, testing the ability of students to carry out skills and procedures learned, and identifying discrepancies between students performance on the course and the ability to transfer these to the occupational roles on the job.

This particular focus was very much concerned with the 'relevancy factor' of whether knowledge and skills

learned could be effectively transferred as theory to practice in the working situation in which students would later find themselves. Clearly with nursing courses this factor of transfer and relevance is important, particularly with a nursing curriculum which is hospital-based and students seen to be a central part of the nursing work force."

(Greaves, 1984, p.19)

Traditionally, evaluation models have been broadly divided under the categories of quantitative/qualitative. Another category was mentioned by Davis (1987). He considered evaluation with regard to two parameters: knowledge and control.

The literature of evaluation, has been marked by various models which have served to conceptualize the field and to draw boundaries on the role of the evaluator. Some of the major models of evaluation and the role of evaluators were stated by Herman et al (1987) as follow:

- Advocacy-adversary evaluation: evaluation should derive from the argumentation of contrasting points of view.
- Decision-oriented evaluation: evaluation should facilitate intelligent judgements by decision makers.
- Evaluation research: evaluation should focus on explaining effects, identifying causes of effects, and generating generalizations about programme effectiveness.
- Goal-free evaluation: evaluation should assess programme effects based on criteria and apart from the programme's own conceptual framework, especially on the extent to which real client needs are met.
- Goal-oriented evaluation: evaluation should assess student progress and the effectiveness of educational innovations.
- Responsive evaluation: evaluation should depict programme

processes and the value perspectives of key people.

- Utilization-oriented evaluation: evaluation should be structured to maximize the utilization of its findings by specific stakeholders and users.

Indeed, there are several evaluation models available to guide the evaluation process. In this respect Watson and Herbener (1990) believed:

"No single model is best and nurse educators must consider a variety of variables. Ideally, the selection of a model should be based on the purpose of the evaluation, programme needs, material and spatial resources, and personnel time, as well as the needs and desires of key interest groups."

(Watson and Herbener, 1990, p.318)

The kind of evaluation that this study has chosen to conduct is based on the above opinion and also on the conditions that were explained in the first chapter. Some of the evaluation models are described briefly.

5.61 The Traditional School or the Classical Experimental Model Hamilton (1977) noted that the first person who undertook a curriculum evaluation was Tyler (1949). It is generally accepted that Tyler provided the first recognizable prototype of evaluation practice in the 1930s when he generated the "traditional" or "orthodox" approach. He concentrated on looking at curriculum development through the rigorous development of objectives with concomitant evaluation.

Whiteley (1992) compared the history of the evaluation in different disciplines. She believed that in the 1960s a similar traditional approach appeared in management evaluation in which, cost-benefit analysis was used to measure the value of training. Performance-based measures were

taken before a training initiative and repeated again afterwards.

To support the classical experimental model of evaluation Taba (1962) asserted that objectives must be prespecified. This is crucial for evaluation and evaluation in turn is crucial for effective teaching, the continued presence of certain subjects on the curriculum and for curriculum development itself. She believed, it is essential that those things which are most clearly evaluated are also most effectively taught.

Lawton (1983) pointed out the similarity of approaches in agriculture and education with the classical model of evaluation:

"The classical model treats the problem of evaluating a curriculum project or a teaching style as the same kind of research as an experiment in agriculture or botany. According to this model, an educationist would:

- a) test two groups of students on a specific part of the curriculum;**
- b) apply the new teaching technique in one of those groups;**
- c) test again;**
- d) compare the learning in the experimental group with the results in the control group students. Statistical tests can be applied to see whether any difference is significant or not."**

(Lawton, 1983, p.100)

The traditional strategy for conducting evaluation research consists of four broad phases. Polit and Hungler (1987) listed those phases as:

- determining the objectives of the programme,
- developing a means of measuring the attainment of those objectives,
- collecting the data,
- interpreting the data vis-a-vis the objectives.

These steps sound rather straightforward, much like the steps in most

research studies.

Travers (1978) criticized the classical experimental model of evaluation and enumerated some of its weaknesses:

"The students may well manifest all of the behaviours that are to be accepted as evidence of goal achievement, but these may have little to do with the programme. The participants may have learned these behaviours elsewhere, or they may even have learned them before they entered the programme. If the measures of outcomes are to be related to the education provided, then there must be a control group."

(Travers, 1978, p.221)

This form of evaluation is based purely on the quantitative measurement of numbers and hence Hamilton (1977) viewed it as a 'numbers game'. According to Greaves (1984) such hardline measurement of goal achievement can never be unequivocal and to rely totally on this form of evaluation as a utopian approach is counter-productive in educational assessment.

The technical difficulties of this model of evaluation are defined by Lawton (1983). He stated that there is a tendency to concentrate on average differences between the control group and the experimental group, and to ignore the important individual differences. The larger the group is, the pressure to neglect individuals would increase.

"Another difficulty is the exaggerated importance given to test results. There is a tendency for experimenters to measure what can be easily quantified. This kind of experiment is often based on a fallacy. The assumption is made that the same subject matter is being taught to the experimental group as to the control group, but in a different way or using different materials."

(Lawton, 1983, p.101)

Polit and Hungler (1987) believed that the most difficult task in curriculum evaluation by objective model is to spell out in detail the goals of a programme or a practice. Typically, there are numerous objectives for a programme, and these objectives might be vague. There are many instances in them the focus has been on psychological dimensions such as moral or on an emotion (for example, fear) that do not always manifest themselves in behavioural terms. But the evaluator who tries to formulate programme goals in terms of behavioural objectives will almost always find that the goals are less vague and diffuse than what they might otherwise have seemed.

Finally as it was expressed by Parlett and Hamilton (1972), the traditional input-output model used in testing is inadequate for the task, because there are many problems in practice which some of them are:

- these programmes allowed for little or no change during the period of study,
- large samples must be used in order to achieve randomization, or the experiment must be strictly controlled. The former is expensive in time and resources. The latter involves the manipulation of personnel which may be unethical,
- large scale sampling smoothes out local disturbances which may be important,
- it often ignores the questions posed by various interested groups,
- quantitative methods restrict the design of the study and may neglect other important data which is disregarded as being 'subjective', 'anecdotal' or 'impressionistic'.

5.62 The Research and Development Model Some might find this model as essentially a variation of the classical model, but there are

much more important differences between them. According to this model as Lawton (1983) believed:

"All curriculum development should begin with research, one result of which would be a clarification of the goals. The industrialist must know exactly what he is trying to produce; the school must know what kind of differences in student behaviour will be achieved. Control groups might be used, but they might be avoided. Many of the objections to this kind of evaluation are similar to classical model."

(Lawton, 1983, pp.101-2)

5.63 Evaluation During the Learning Process About three decades ago, numerous new theoretical models of evaluation emerged. They described the situations where it is possible to undertake evaluation using predominantly qualitative modes of inquiry, leaving the measurement modes in their behind. The first author of new thinkers was Stake (1967). Sconce and Howard (1994) described the basic concepts of the Stake's model:

"This framework, 'Countenance Model' encompassed antecedents, transactions and outcomes. Antecedents are those conditions which existed prior to the learning experience, such as the individual's inherent abilities and motivations. Transactions refer to the processes of education including teaching methods and assessment strategies. The outcomes are measured as academic achievements or practical abilities, including any unintended outcomes of learning and are thus inclusive rather than exclusive."

(Sconce and Howard, 1994, p.281)

Hamilton (1977) stated that Stake (1967) produced a framework that could supposedly be followed by anyone choosing to utilize it, but

unfortunately made it so all embracing that he confounded his intentions and made it difficult to implement. Broadly, he proposed that a programme should be looked at in terms of antecedents, transactions and outcomes.

This model could be useful in educational evaluation if its concepts were precise. Whiteley (1992) addressed the model's shortcomings:

"Problems emerged with the model however, not least that the table suggested as a framework was rather complex to operationalize, and for some even to comprehend. Stake also failed to issue guidance on how to recognize and deal with unintended outcomes."

(Whiteley, 1992, p.318)

Four years later, a model that was based on discerning the decision making processes was produced by Stufflebeam (1971). It was labelled the 'CIPP model: Context, Input, Process, Product'. Guba and Lincoln expressed (1981) that:

"The decisions to be made related to the four categories in the title of the model, the terms being self-exploratory in relation to the type of information each was designed to represent. The possibility of making the categories link up to form a loop was built in via a feedback mechanism, and the modification of the programme as it developed became theoretically possible."

(Guba and Lincoln, 1981, p.14)

Whiteley (1992) argued about the disadvantage of this method. She stated that the disadvantage of this model is primarily that, by using decision making to operationalize the model, an assumption is made that this process was open to scrutiny. This proved that this is not the case, but it is as a result of unwillingness or inability of the managers to examine

their own operations. In addition, it is not always easy to identify the so-called decision maker and the model also becomes difficult to work.

Scriven revised his concept five years later and presented the idea of 'Goal-Free' evaluation (1976):

"Proponents of the goal-free model argue that programmes may have a number of consequences besides accomplishing the official objectives of the programme and that the classical model is handicapped by its inability to investigate these other effects. According to advocates of goal-free evaluation, the mere knowledge of the programme objectives has the potential of biasing the evaluator by suggesting the areas of the programme that should be researched. Thus, goal-free evaluation represents an attempt to evaluate the outcomes of a programme in the absence of information about intended outcomes."

(Polit and Hungler, 1987, p.160)

Some years later, the concept of responsive evaluation was developed by Stake (1980):

"To be of service and to emphasize evaluation issues that are important for each particular programme, I recommended the responsive evaluation approach. It is an approach that sacrifices some precision in measurement, hopefully to increase the usefulness of the findings to persons in and around the programme. An educational evaluation is responsive evaluation if:

- 1) it orients more directly to programme activities than to programme intents,**
- 2) it responds to audience requirements for information,**
- 3) the different value-perspectives of the people at hand are referred to in reporting the success and failure of the programme. In these three separate ways an evaluation plan can be responsive."**

(Stake, 1980, pp.76-7)

In responsive evaluation, as Leino-Kilpi (1993) identified, the emphasis is on process evaluation, on negotiation and on the flexible relationship between teacher and learner. She believed that students' own objectives play an important role in evaluation.

In nursing education responsive evaluation attracted some attention during recent years. The teaching and evaluation are not totally objective in clinical practice. Professional care requires a wide range of skills and abilities. Therefore, such a teaching and learning cannot be evaluated without reference to subjective evaluation criteria.

As Guba and Lincoln (1981) described, this model was just something to push people to listen to it. The proposal of the goal-free model was somewhat overstated at the outset, in an attempt to get people to listen. They believed that the model remained at a conceptual level, never really addressing the issue of needs assessment in concrete practical terms, or suggesting how to identify effects.

5.64 The Illuminative Model An alternative title for this evaluation model is the anthropological model. This name is derived from the nature of this model which depends upon the people's opinion about different subjects.

"In direct contrast to the classical model, this provide for a qualitative account of the course. Empirical data are not sought: the main concern is with description and interpretation based upon observation and interview. The advocates of this model would claim that it provides a much wider perspective of the whole course as opposed to just the measurement of behaviour."

(Kenworthy and Nicklin, 1989, pp.125-6)

Parlett (1972) who suggested this model for the first time, believed that

the primary concern of illuminative evaluation is with description and interpretation rather than measurement and prediction. It attempts to illuminate or throw light on the curriculum.

"Such an approach to evaluation has three stages: investigators observe, inquire further and then seek to explain. Illuminative evaluation concentrates on the information-gathering rather than the decision-making component of evaluation. The task is to provide a comprehensive understanding of the complex reality(s) surrounding the project: in short to illuminate."

(Parlett and Hamilton, 1976, p.88)

The most common methods of data gathering for the illuminative model of evaluation are qualitative methods. Greaves (1987) identified these approaches as follow:

- the anthropological methods include approaches such as participant observation;
- structured and non-structured interviews, interviews with individuals, interviews with groups;
- questionnaires written responses;
- recorded oral responses;
- reports by course members, teachers and managers;
- check lists;
- documents' minutes of meetings and the like.

Often a triangulation approach is used to gather accounts of the teacher-learner situation from three points of view, those of teacher, of learner, and of participant observer, using multiple methods to study the same activity.

Despite many advantages of illuminative model against classical experimental model there were some criticism against it.

"The problems involved in illuminative evaluation have not been entirely solved. Rules of procedure are not yet sufficiently clear and accusations about subjective impressions are not entirely unfounded. Another problem which emerged with the 'new wave' evaluations is the development of esoteric methods and language which tended to make evaluation ever more remote from teachers and administrators than conventional research."

(Lawton, 1980, p.103)

Lawton (1980) also had another important criticism on this approach which included the questioning of the validity of results in terms of researcher bias and evaluator's role. He stated that this model, tell it as it is, inevitably involves some self-judgement. The model is also a non-prescriptive method demanding adaptation by the evaluator to the situation being studied. Even amongst those supporting this new-wave of evaluation, there was no agreement among the evaluators on whether evaluation should consist of observations being interpreted by the evaluator himself or whether the evaluators' role was simply to present data.

The other opponent of the illuminative model of evaluation is Greaves (1987) who believed that the model is too subjective, rather impressionistic, and without objective truth.

The qualitative approaches consistent with the illuminative school do not reject outright the quantitative methods of the measurement school. They reject the assumption that objectivity can only be obtained through traditional quantitative scientific method.

5.65 The Briefing Decision Makers Model The evaluator in this model is usually an external agent who is 'briefed' to provide information for decision-makers. Kenworthy and Nicklin (1989)

described this model concerned with political issues and perspectives:

"There is no intention to infer that the evaluator simply produces for the decision-makers the answers or evidence that they are seeking; nevertheless, there needs to be an awareness of the purpose of evaluation within the context of the relationship between the decision-makers and the course."

(Kenworthy and Nicklin, 1989, p.126)

Regarding the political importance of the evaluation for decision-makers, different types of evaluation are described as a political classification of evaluation studies. In general, each kind of the political dimensions of evaluation has some advantages and also some disadvantages. Selection of the proper dimension of evaluation depends upon many different factors. Hammersley (1993) differentiated between three main political types of evaluation, the technique of study and the evaluator's role as follow:

- **Bureaucratic evaluation** the evaluator accepts the values of those who hold office, and offers information which will help them to accomplish their policy objectives. He acts as a management consultant, and his criterion of success is client satisfaction. His techniques of study must be credible to the policy-makers and not lay them open to the public criticism. He has no independence, no control over the use that is made of his information and no court of appeal.

- **Autocratic evaluation** is a conditional service to those government agencies which have major control over the allocation of educational resources. It offers external validation of policy in exchange for compliance with its recommendations. Its values are derived from the evaluator's perception of the constitutional and moral obligations of the bureaucracy. He focuses upon the issues of educational merit and acts

as an expert adviser. His techniques of study must yield scientific proofs, because his power base is the academic research community.

- **Democratic evaluation** is an information service to the community about the characteristics of an educational programme. It recognizes value-pluralism and seeks to represent a range of interests in its issue-formulation. His techniques of data-gathering and presentation must be accessible to non-specialist audiences. His main activity is the collection of definitions of, and reactions to, the programme. He offers confidentiality to informants and gives them control over his use of the information. The report is non-recommendatory, and the evaluator has no concept of information misuse. The criterion of success is the range of audiences served.

5.66 The Teacher as Researcher Model It has been suggested that evaluation should not only move away from the product and process models of curriculum towards a research model but also, it is not accepted to make distinction between evaluation and research and instead cast the teacher/developer/researcher in the role of investigator. The curriculum that teacher creates will not be right or wrong, but will be judged by whether it advances knowledge or not.

"The teacher is a professional indulging in 'research-based teaching'. Evaluation must be 'self-evaluation'. One of the problems is that of role conflict: the teacher has to be both someone to encourage learning, and also the participant observer trying to assess success and the failure in the classroom. The great merit of this approach is that the culture of the school and the culture of the classroom retain their significance."

(Lawton, 1980, pp.104-5)

It seems that this model of evaluation is mostly applicable to school-based

curriculum in which teacher is the curriculum developer and in many cases himself/herself is the evaluator of that programme. It is therefore not really a model of evaluation applicable to higher education.

5.67 The Case Study Model The case-study is a qualitative approach which has been recently applied extensively in many disciplines such as anthropology, sociology, education, medicine and psychiatry. Unlike some other forms of research approach, case studies are particularly suitable for single-handed project researcher.

Yin (1984) defined this model of evaluation as an enquiry which uses multiple sources of evidence. It investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident.

Indeed the case study can be regarded as a modified version of illuminative evaluation since it is essentially research in depth rather than breadth. Verma and Beard (1981) stated that the typical case study is an intensive analysis and evolutionary description of an individual. In educational and other behavioural sciences the method has been conducted with individual children, with all types of groups from a small group within a class to the school itself. This method is not practical with a large sample. However, it can be employed in studying a small group of individuals.

The reasons of popularity of the case study are explained by Patton (1987):

"The desire to document individualized client outcomes is one major reason why case studies may be useful. There are other reasons why case studies may be helpful. Sometimes staff or funders are puzzled by particular cases: unusual successes, unusual failures, or dropouts. Detailed case studies of these extreme cases may generate particularly useful information. In

other situations, a case study approach may be indicated by the critical nature of one or a few cases."

(Patton, 1987, p.26)

A wide range of evaluation techniques are used in this model in order to obtain as complete an account as possible of the whole course, or course unit. It will therefore employ both quantitative and qualitative methods which will include measurement, interviews, observations and the use of questionnaires.

Some of the criticisms of this approach are described by Johnson (1994) as follow:

- the chief criticism is the lack of scientific rigour. There is no "book of rules" for the design of a case study. It relies heavily on the skill and industry of the individual researcher.
- if a case study focuses on a unique institution or phenomenon, it may be of esoteric interest, but there is no bonus of "relatability". Since non-uniqueness is the aim, selection of case study sites and phenomena examined is crucial for the usefulness of the study for a wider audience.
- although the intention is to make a study "in the round", the exploratory nature of the work may tempt the researcher down a particular pathway, to the detriment of other lines of enquiry.

As a result, and in consideration of the weaknesses of the mentioned models of curriculum, it seems that the best and the most applicable approach of curriculum evaluation in nursing education is a combination of all the models i.e. triangulation technique, which would have the advantages of all those models and amend their shortcomings. In order to accomplish this eclectic approach, the most appropriate model of

evaluation should be applied for each area of the nursing. Triangulation covers the deficiencies or weaknesses of any one method of evaluation. It consists of making comparisons from different perspectives, or from different groups of informants or observers.

"An educational course as complex as nursing cannot be effectively evaluated by using just one model. Whilst educational factors are of prime concern in any nursing course, the political issues of service provision and staff establishments cannot be ignored. Performance indicators that reflect both quantitative and qualitative measures in input and output terms are increasingly required by health authorities and their general managers as part of quality assurance programmes."

(Kenworthy and Nicklin, 1989, p.127)

5.7 Levels of Evaluation Ideally, the systematic collection of information for the purpose of decision making should start with individuals looking at their own performance either to monitor the development and thereby improving the outcome. Davis (1987) divided the levels of evaluation into internal and external level.

"In the internal level, which includes: self-evaluation; peer evaluation; and institutional evaluation, control over the information gathered should remain theoretically with the individual or the unit. Internal level of evaluation is more related to the teaching strategy.

Centrally based evaluation (or external evaluation) implies some form of external control which in turn presupposes public accounting of decisions that may be taken."

(Davis, 1987, p.206)

There are two general levels of evaluation: internal and external. The

different types of the internal level including the evaluation by: students, peer, institution; and the external level of evaluation will be explained.

5.71 Evaluation by Students In nursing education, many evaluation methods describe evaluation as something that should be carried out by nurse educators. In other words, the students are the passive recipients of education and all that remains is that their teachers test out whether the educational experience has worked or not. Burnard and Chapman (1990) stated a different opinion:

"There is a growing trend towards student-centred learning and towards learners taking responsibility for their own learning. If this is the case, it would seem logically wrong to exclude them from some decision-making in the evaluation process."

(Burnard and Chapman, 1990, p.111)

As the student nurse is the main subject and the centre of focus of nurse training courses, Burnard and Chapman (1990) seem right to suggest that it is wrong to exclude students from the evaluation process. Kenworthy and Nicklin (1989) had a similar idea and noted that an inclusion of the students' sharing in educational programme help it to be more complete and reliable. They said:

"There is an increasing tendency to consult students as part of the process of course evaluation and this may take the form of group discussions, the completion of questionnaires and involvement in curriculum development and review. If students feel that they are a part of the course and its development, sharing in the ownership, they will not only work hard at making it a success but will seek to criticise its shortcomings whilst also praising its strengths. Student nurses, therefore, not only have the right to participate in course evaluation but a responsibility to do so, a responsibility on behalf of those that follow on subsequent courses. Because students are involved in all aspects of the course they should contribute to

providing information with which all components of the course can be evaluated."

(Kenworthy and Nicklin, 1989, p.134)

Burrell et al (1988) are favourable to this idea believing that one important source of data for evaluation is the student-body, whose assessment results, when analysed in detail, may provide evidence of weaknesses in the system. According to them, the students know whether or not they have been changed by their experiences, in what directions and to what extent, even though they may have no clear idea of the significance of the changes in relation to the curriculum objectives.

Nowadays, as a result of the continuous progress of the sciences, teaching of different subjects of a discipline is impossible to be fulfilled by one person. But, different courses are taught by different teachers. Where all the teachers on a given degree programme try carefully to co-ordinate what they are doing, they are not able either individually or collectively to know at first hand what the course as a whole comprises. That is because, each teacher is only directly involved in that part of the course which he or she teaches. Therefore, as Becher and Kogan (1992) expressed:

"The actuality of what colleagues do has to be inferred indirectly from discussions about syllabus, comments from students and the like. In contrast, the students, individually and collectively, experience all or nearly all the separate components as a complete entity. Students more than anyone else have the opportunity of assessing whether the degree programme is the meaningful entity which its planners and providers intend it to be."

(Becher and Kogan, 1992, p.165)

Seeking the opinion of students about educational programmes is

generally an accepted practice in nurse education. Pendleton and Myles (1991) supported the use of students' opinion for evaluation of an educational programme. Means of collecting this information may vary from writing on blank sheets of paper to completing more structured questionnaires. Students are undoubtedly in a unique position to offer feedback to teachers as they are the focus of the teacher's activity. However, it should be noted that the evaluation is not based on factors which are beyond the teacher's control, particularly as variable such as the size of the class and whether or not the course is compulsory are known to affect the student ratings.

Therefore, although the students' opinions are helpful in evaluation but as Kogan (1986) mentioned there are not without deficiencies.

"Students' judgements are clearly individualistic. Few of them would have the confidence to claim access to a set of external and objective standards in terms of which teaching programmes could be definitively assessed. At best, they can aspire to a personal response to a unique experience."

(Kogan, 1986, p.165)

Although student evaluations of teaching effectiveness are considered valuable and, indeed, are mandatory within most university settings, Harwood and Olson (1988) pointed out the other problem of this source of evaluation i.e. different perception of students and peers about the effectiveness of teaching. They believed that inherent problems in student evaluations of teaching should be noted. A faculty member's students and peers can have widely differing perceptions as to the teaching effectiveness in a given teaching situation. Students' evaluations provide reliable information but, they are an incomplete source when considered

by themselves.

5.72 Evaluation by Peer In peer evaluation the teacher obtains the co-operation of a colleague(s).

"It is desirable for the teacher to select a colleague with whom she or he feels comfortable or who she or he thinks has particular skills to offer. Peer evaluation may overcome some of the potential shortcomings of self-evaluation used alone. Also it provides an opportunity to confront personal illusions and can help those teachers who find it difficult to identify for themselves the positive aspects of their teaching."

(Pendleton and Myles, 1991, p.194)

Braskamp (1980) listed different stages of evaluation procedure by peer as:

- systematic observations and ratings of classroom behaviour obtained by a personal visit;
- viewing the classroom interactions on videotape;
- judgements of the instructor's lesson plans, course objectives and syllabus assignments, and evaluation and grading methods;
- evaluation of the quality of advising (academic, personal);
- evaluation of the instructor's involvement in instructional and curricular development and research.

Becher and Kogan (1992) believed that peer evaluation has many applications in higher education and indeed it is an important source of data gathering. In this regard they stated:

"Elements of peer review cannot be avoided in any of the evaluative mechanisms used in higher education. Even performance indicators use data originating from it. Peer review has long informed the decisions made by central authorities, who use academics to evaluate departments, courses and research proposals; their

judgements thus underpin allocative decisions."

(Becher and Kogan, 1992, p.161)

Peer evaluation of teaching effectiveness has not been well developed in nursing or nursing education literature. Harwood and Olson (1988) considered it within a paradigm of multiple sources of faculty role appraisal. They stated that peer evaluation is a method of demonstrating professional accountability and teaching effectiveness. Peers offer a critique based upon their expert knowledge of the content area and teaching strategies, a perspective not available through most students' evaluation. The process of peer evaluation has ranged from a formal presentation and evaluation by a panel, to an informal sharing of perceptions between colleagues who share mutual trust and proximity of location. The goals of peer evaluation have varied from personal growth and a fostering of team cohesiveness to a critical piece in the total faculty performance appraisal process.

All the teaching staff would be target of appraising and as a part of curriculum evaluation. They observe the students' performance under supervision of their colleagues with a curriculum. Burrell et al (1988) described the peer evaluation more precisely as:

"The teaching staff will also have much to contribute to the process of evaluation since they are probably subject to periodical appraisal in any case and their ability or lack of ability to cope with certain aspects of the curriculum may well be discovered to be due to deficiencies in the curriculum rather than to any deficiencies in their own expertise. They also observe the students daily and assess their work and react to this feedback after they have analysed its roots. However, in a vocational programme, it is important to reach out beyond the narrow confines of the school and to seek a wider evaluation of the students as they

carry out work in the wards under the supervision and guidance of clinical teachers or, later, after qualification."

(Burrell et al, 1988, p.169)

One factor which should be taken into account is the importance of familiarity of the colleagues with the appraising matter. More proficiency in a particular subject means more accuracy. Indeed, peer evaluation works best in relation to particular projects and within a single subject area, rather than at the level of the basic unit as a whole. There are some weaknesses in the peer evaluation which are identified by Harwood and Olson (1988):

"Anxiety arises with recognition of the potential influence of peer evaluation on job security, career goals, self-esteem, and perception of self-worth. Most faculty are aware of their limitations and faults. This awareness, coupled with evaluations, long-standing negative connotation in nursing, can lead to defensiveness among colleagues undertaking peer evaluation. The evaluators find it difficult to critique their colleagues. Superficiality of the critique, lack of understanding of other faculty members' milieu of practice, and fear of repercussions on future working relationships as a consequence of honesty are cited as detracting from relevant peer evaluation."

(Harwood and Olson, 1988, p.377)

5.73 Institutional Evaluation Institutions may be evaluated by themselves by state authorities or by peer review bodies. Kogan (1986) explained the benefits of allocation of public funds on institutional evaluation:

"Anxiety about the narrowness of system evaluation of

institutions has led to thought about the allocation of public funds on instructional performance and quality indicators. This is an attempt to get away from allocating funds of an enrollment-based model of formula in which activity or size rather than achievement is the principle criterion of funding. Growth is not a good measure of achievement and enrollment levels are maintained at the expense of standards."

(Kogan, 1986, p.134)

5.8 Instrumentation of Evaluation Instrumentation is the process of selecting or developing devices and methods appropriate for measuring the variables identified in relation to a research problem. Waltz and Bausell (1983) specified that a device or method will be effective only as it relates specifically to the study purposes and elicits data that allow the researcher to answer the research questions or test the research hypotheses.

The whole process of collecting data is called instrumentation. It involves not only the selection or design of the instruments but also the conditions under which the instruments will be administered. Several questions are considered by Fraenkel and Wallen (1993) in relation to choose or develop an instrument:

- **Where** will the data be collected? this question refers to the **location** of the data collection. Where will it be? In a classroom? A schoolyard? a private home? On the street?
- **When** will it be collected? This question refers to the **time** of collection. When is it to take place? In the morning? Afternoon? Evening? Over a weekend?
- **How often** are the data to be collected? This question refers to the **frequency** of the collection. How many times are the data to be collected? Only once? Twice? More than twice?

• **Who** is to collect the data? This question refers to the **Administration** of the instruments. Who is to do this? The researcher? Someone selected and trained by the researcher?

These questions are important because the way the researchers answer to them may affect the data obtained. Instruments can be classified in different ways. Some of the most useful classification of data collection instruments are as follows:

5.81 The Information providers in nursing education, Thomas (1990) mentioned the main methods of data collection which are used by nursing investigators. She believed that:

- A cardinal rule is to use existing records whenever possible. In retrospective studies, records are the sole sources of data;
- The second source of information is use of observation. At first, the investigator must define precisely what will be observed and how it will be recorded;
- The biophysiological measures produces valuable knowledge mostly useful in clinical settings (for example in evaluation of an educational programme to teach self-care principles to the patients);
- Interviews and questionnaires are used to elicit information from research subjects.

5.82 Acquirement of Instrument There are essentially some ways for a researcher to acquire an instrument. Find and administer a previously existing instrument of some sort, or administer an instrument the researcher has personally developed.

"Researchers do one of three things when they develop a data collection form: *adopt* items developed

by other researcher, *adapt* items developed by other researchers, or *develop* their own items. It is most efficient to adapt or adopt pertinent sections of existing instruments. This also is essential when the objective of the research is replicate another study or to use findings from another study as a standard."

(Bourque and Clark, 1994, p.8)

According to the different components of the curriculum, situation of nursing education in Iran and also cultural differences of textbooks and field of study, this study benefited from all the mentioned ways of data collection form.

5.83 Who Complete(s) the Instrument? When it comes to administering the instruments to be used in a study, either the researchers must do it themselves or they must ask the subjects of the study to provide the information desired.

"The groups of the instruments according to whether they are completed by researchers or by subjects include:

- **researcher completes:** Rating scales, Interview schedules, Tally sheets, Flowcharts, Performance checklists, Anecdotal records, Time-and-motion logs;
- **subject completes:** Questionnaires, Self-checklists, Attitude scales, Personality (or character) inventories, Achievement /aptitude tests, Performance tests, Projective devices, Sociometric devices."

(Fraenkel and Wallen, 1993, p.105)

5.84 Kinds of Measurement Instruments As Fraenkel and Wallen (1993) stated, there are two kinds of instruments for the comparing of measurement results:

- **Norm-Referenced** instruments, all the derived scores give meaning to individual scores by comparing them to the scores of a

group. This means that the nature of the group is extremely important. Whenever such scores are used, researchers must be sure that the reference group makes sense. The group used in getting derived scores is called the norm group.

- **Criterion-Referenced** instruments, an alternative to the use of customary achievement or performance instruments is to use a criterion-referenced instrument which is based on a specific goal or target.

In order to collect the data in this research, amongst the mentioned instruments two of them, questionnaire and interview, were applied. Therefore, they are described in detail as follow.

5.9 Questionnaire A questionnaire is a measurement instrument and can be used to measure characteristics of a given population with regard to age, sex, marital status, religion, occupation, state of health, etc. this may be classified as biological data. Personality traits, values, attitudes and opinions are commonly measured through the use of questionnaires. A questionnaire can be completed in three ways: postal questionnaire, group administered questionnaire, and personal contact questionnaire.

- **Mail (postal) questionnaire.** Frequently, the postal questionnaire is the best form of survey in conducting an educational enquiry. One of the advantages of this kind of questionnaire is described by Cohen and Manion (1989).

"An interview survey based upon some sampling of the population of schools would be both expensive and time-consuming. Meanwhile, a postal questionnaire would have several distinct advantages. Moreover, given the usual constraints over finance and resources, it might well prove the only viable way of carrying through such an enquiry."

(Cohen and Manion, 1989, p.109)

Other characters of the mail questionnaire are stated by Struening and Guttentag (1975). They believed that the postal questionnaire is probably the least costly method of original data collection. The range of questions it can deal with is extensive. The chief problem can be the rate of nonresponse and the consequent bias in the data. Those who respond to the questionnaire are likely to differ from those who do not respond in importance but unspecified ways. The data could be hardly representative of the responses of the whole population surveyed.

Completed but unreturned questionnaires are useless to the researcher, so the arrangements for return are an important as the questionnaire design. There are some misconceptions about the rate of returning of mailed questionnaires. Hoinville and Jowell (1978) rejected those misconceptions and argued that research shows that a number of myths about postal questionnaires are not borne out by the evidence. Response levels to postal surveys are not invariably less than those obtained by interview procedures; frequently they equal, and in some cases surpass those achieved in interviews. Nor does the questionnaire necessarily have to be short in order to obtain a satisfactory response level. With sophisticated respondents, a short questionnaire might appear to trivialise complex issues with which they are familiar.

The rate of response is an important factor in reliability of the data collection process. Cohen and Manion (1994) determined that the minimum response rate to be reliable is forty per cent which could be obtained through a well planned postal questionnaire. A seventy per cent to eighty per cent response level should be possible with the judicious of reminders.

- **Group administered questionnaire** McKernan (1991) pointed

out:

"A group of respondents is brought together in one place to complete the questionnaire (the inquiring researcher may or may not be present). This is the strategy most preferred by teachers who wish to collect data from pupils about curriculum for purposes of unit evaluation, etc."

(McKernan, 1991, p.127)

• **Personal contact questionnaire** McKernan (1991) believed that in this kind of data collection, the researcher contacts the respondents and they complete the questionnaire. In some cases the research situation is treated as an interview by the researcher asking the questions and recording the answers in the presence of the respondents.

Cormack (1984) made a further point about the method of response. This may be either open-ended or closed. What is meant by an open-ended questionnaire is that questions are posed and the respondent is free to answer them in his own way with little constraint from the researcher. In the closed type of questionnaire a set scale such as a five point scale is used. The respondent answers by ticking one of the boxes and this gives no scope for individual expression.

"Open-ended questionnaires may yield potentially rich data which may be difficult to interpret and are, therefore, subjective. Questionnaires which use a closed format can be analysed objectively by using a computer, for example. But what is gained in objectivity may be counterbalanced by what is lost by the lack of opportunity for individual expression. Sometimes a combination of formats may be found on a questionnaire with the object of drawing on the strengths of both types of question."

(Cormack, 1984, p.111)

5.10 Interview The interview allows two-way communication in which the meaning of a response can be clarified. The interview approach should be used when it is desired to collect extensive data on a few subjects. As Johnson (1977) expressed, an interview could be useful in two ways:

"Interviews might be used to collect more information from a subsample of individuals who received the questionnaire. In addition, information obtained through interviews might be used to build a better questionnaire."

(Johnson, 1977, p.158)

There are some important points which should be kept in mind before accomplishment of an interview in order to promote the process of data gathering. As Powney and Watts (1987) suggested, the preparation for interview includes the following stages:

- familiarity with the overall research plan;
- structuring (or not) the framework for the interviews;
- selection and briefing of interviewer(s);
- selection and contacting the interviewees;
- planning recording and analysis;
- calculation of costs in time and money;
- piloting each of these stages and making appropriate modifications.

Depending on the respondents' verbal report about experiences, the issues such as perceptions, preferences, problems, feelings, attitudes, and other phenomena may be relevant to the study question. Format of interview from viewpoint of Wilson (1989) is:

"Some interviews may be highly structured, in the sense that the wording of each question, the sequence in which they are asked, and the possible responses are planned by developing an interview schedule (a lot like a script). Interviewers are trained to use it. Structured interviews are akin to questionnaires, with the exception that the interviewer and the respondent are in each other's presence when the interview is used."

(Wilson, 1989, p.436)

The interview approach is similar to that of the questionnaire in many ways. But, it is conducted in a face-to-face, or personal contact situation such as a telephone interview. The interview, as McKernan (1991) believed, has an advantage over the questionnaire that allows the interviewer to probe areas of interest as they arise during the interview.

The person conducting the interview could be a source of bias. This point is described by Johnson (1977) that:

"A biased interviewer might encourage certain responses or interpret responses according to a particular framework. The manner in which a question is asked, for example the tone of voice, can make a difference in the way a question is answered. There is more than a little guesswork involved in the collection of data. The interviewer decides whether to follow up a particular response or whether a facial expression or tone of voice is worth noting. Special training may be desirable for a person who collects data in face-to-face situations, although training does not eliminate the possibility of bias."

(Johnson, 1977, pp.158-9)

An important issue of interview is generalisability. This is a problem for all kinds of research work and not just for interviewing. Powny and Watts (1987) explained:

"An interviewee is at one and the same time an individual and a member of many different groups. In many respects the choice of sample is always problematic and is also, in some respects, self-selecting. Group interviews offer further dangers. Some groups will be well established, often chosen because they already are a group and are used to working together in a common context. Because the dynamic of the group is unpredictable it is not always possible to generalise even to other similarly constituted groups. All these problems simply mean that the researcher must be very careful in interpreting interview data and in particular in the kind of general statement they make as they summarise interview outcomes."

(Powny and Watts, 1987, pp.189-90)

The problem of generalizability has been attended by many educationalists in recent years, but the focus of attention is generally on qualitative research. For example, Schofield (1993) argued in detail the way that a researcher can increase the generalizability of a qualitative research. His suggestion helps to design a qualitative research in order to increase its ability to fit with different situations.

"Choosing study sites on the basis of typicality and conducting multisite studies; designing studies so that their fit with future trends and issues is maximized; seeking out sites in which one can study situations likely to become more common with the passage of time and paying close attention to how such present instances of future practices are likely to differ from their future realizations; locating situations that are known or expect to be ideal or exceptional on some a priori basis and studying them to see what is actually going on there."

(Schofield, 1993, p.109)

Although the above suggestions are not directly related to the generalizability of an interview, but they can be helpful to design interviews and also promote the awareness of interviewer.

5.11 Summary: this chapter provided some evidences to indicate relevance literature by describing the current state of knowledge on the evaluation of curriculum. It involved what other people have written about the different aspects of curriculum evaluation, the questions which are relevant to every evaluation programme, types and levels of curriculum evaluation, instrumentation of evaluation, etc. The chapter also included the advantages and disadvantages of different models of curriculum evaluation presented by the educationalists. At the end of each section, the appropriate points for this research were concluded. Hence, it has been a source for research ideas, orientation to what is known, defining a conceptual context, defining the variables, and finally guiding the design and methods which were applied in the study.

PART FOUR: METHODOLOGY OF THE RESEARCH

"By 'methodology', the epistemological foundations of deduction and inference are meant. This is, the way in which, through interpretive and conceptual schemes, patterns of coherence and sense are derived from the data collected."

(Hughes, 1976, p.43)

This part describes the details of how the study was conducted. The design of the inquiry is based on a combination of qualitative methodology and survey methodology that portray opinions and attitudes of two main elements of the nursing curriculum-nurse teachers and student nurses- about the national nursing programme in Iran. The data were collected by face-to-face interview, and administering two kinds of questionnaires. The relationships between the characters of the respondents and their opinions/attitudes were also examined.

CHAPTER SIX: METHODOLOGICAL ISSUES RELEVANT TO THE RESEARCH

6.1 Introduction: The term 'research' can be applied to a vast range of studies.

"Research is careful, systematic, patient study and investigation in some field of knowledge, undertaken to discover or establish facts and principles."

(Webster's Dictionary, 1984, p.1208)

This chapter on methodology therefore comprises the following:

- **type of the research:** research can be conducted in a variety of ways and with multiple motivating factors. Chinn and Kramer (1991) described research studies as two types: theory-linked and isolated research.

Theory-linked research is designed to develop or test theory. It is this quality that sets the stage for the study to contribute to the knowledge of a discipline. Because theory-linked research is conceived and conducted within the framework of theory, the findings of research have greater potential for contributing to the development of useful knowledge. Despite these advantages, there are some certain hazards and problems in this type of research including: inappropriate use of theories, ethical considerations, and theories as barriers.

In isolated research, the investigator formulates questions or hypotheses and uses accepted methods to refute or support the hypotheses or to answer the questions. Questions or hypotheses may come from the practical circumstances surrounding the investigator's work, the imagination, an idea that occurred in reading other research results, or any number of other sources. These same factors can also provide

direction for the development of theory-linked research. Both types of research can ultimately contribute to knowledge, although isolated research is much more limited in the contribution it can make to a discipline.

The methodological approach adopted by this study was focused on the second type.

- **population/sampling:** Holm and Llewellyn (1986) explained these terms. They stated that a population can be defined as any large group of objects, people, or events that can be counted. It is not feasible to collect data about everything or from everyone. Sampling makes it possible to arrive at general conclusions from studying a limited number of observations.

Selection of a sample that could be considered as a proper indicator of the population is not easy. As Travers (1978) believed, a first step in sampling usually consists of identifying those people who are to be included in a sample and difficulties are encountered in tracking down the persons identified. McCall (1990) also mentioned the awareness of the researcher of precisely what population the sample is selected from and to limit conclusions to that population. He stated that even when scientists have control over their subjects samples are not truly random. Another form of bias in sampling occurs when human volunteers are used. There are several kinds of sampling that have struggled to arrange all factors so that the greatest accuracy of measurement can be achieved.

- **variables in the research:** a variable is a concept, a noun that stands for variation within a class of objects. Variables can be classified in several ways as follow:

- quantitative versus categorical variables,

- independent versus dependent variables,
- experimental or manipulated or treatment versus outcome variables.

A basic problem in research is that there are many possible independent variables that could have an effect on the dependent variables. The researcher must be concerned about the influence or effect of other variables that exist and usually are called extraneous variables.

• **methods of data gathering:** data collection refers to how information from the real world can be elicited, systematically recorded, and quantified. There are many ways for collection of information in a research. According to the aim(s) of the study, nature of the problems, design of the study, etc. a researcher can use different instruments. Some of the more common data gathering techniques at the Johnson's point of view (1994) are:

- observation (structure, unstructured),
- interviews (structured or fixed, unstructured or open),
- questionnaires (self-administered, mailed, personally delivered),
- use of records or other documents.

• **criteria for assessing measuring tools:** the quality of the instruments used in research is very important, for the conclusions researcher draw are based on the information she/he obtains using these instruments. Polit and Hungler (1995) pointed out two criteria.

- **Validity** refers to the degree to which an instrument measures what it is supposed to be measuring and concerns with appropriateness, meaningfulness, and usefulness of the inferences. Three main types of validity are: Content-related, Criterion-related, and Construct-related evidence of validity.

• **Reliability** is a major criterion for assessing quality and adequacy of an instrument. It is the degree of consistency with which it measures the attribute it is supposed to be measuring. An instrument can be said to be reliable if its measures accurately reflect the true scores of the attribute under investigation. The main methods of reliability measurement include: Test-Retest, Equivalent forms, Internal-Consistency (Split-Half Procedure, Kuder-Richardson Approaches, Cronbach alpha).

This study applied Content-related and Construct-related approaches of validity and Test-Retest approach of reliability.

• **data analysis/statistical approaches:** more generally, data present a complex and unclear picture and the researcher has to turn to statistical analyses to find out just what the data mean. The process of data analysis and application of statistical approaches will be described in terms of descriptive and inferential statistics. In addition, to reveal whether there are any relationships between the several variables (the respondents' characters: age, gender, experiences, etc.) and the outcome variable (evaluation of the nursing curriculum), correlational studies will be conducted in this research.

• **ethical issues:** this study benefited from the lecturers' and students' viewpoints. It is necessary to consider some points as ethical issues in each research particularly into human beings. Davis and Krueger (1980) described a research subject. They stated that:

"A research subject is a person who volunteered to participate in the research on the basis of having all

the necessary information so that his decision will be a truly informed one. The research subject should be allowed to withdraw from the study at any point if and when he wishes to do so."

(Davis and Krueger, 1980, p.5)

6.2 Methodological Issues: Inspection of the relevant literature indicates that there is no generally accepted scheme for classifying educational research studies. However, according to the nature and definition of science in a broad sense it is possible to produce a taxonomy of types of research:

"The typology has the advantage of highlighting certain crucial differences between research that is oriented to the development of theory and research designed to solve practical problems. It also points out the degree to which each type emphasizes precision and control as compared to reality. Different types of research are: Pure or basic research, Applied or field research, Action research, and Evaluation research."

(Verma and Beard, 1981, p.19)

Polit and Hungler (1987) considered the aim of evaluation as providing answers to questions about the effectiveness of the practice under consideration. In fact, the evaluation is a process of collecting and analysing information related to the functioning of a programme, policy, or procedure that may assist decision-makers in choosing a course of action. On the other hand, James (1993) made a supposition that policy-making is a political activity and political considerations will always provide convenient answers to awkward questions thrown up by research. Thus the ideal of rational decision-making based on information derived from research-based evaluation is probably illusory.

Wolf (1993) stated that determination of the borders of the educational studies is not easy because, within each major type of study there are other types of studies.

"A widely applied way of classifying educational research studies is to define the various types of research according to the "kinds of information" that they provide. Accordingly, studies may be classified as: historical, case, longitudinal, survey, and experimental. Each type of research study has its own particular canons, procedures, techniques, and methods of analysis."

(Wolf, 1993, pp.21-22)

This study has tried to describe the condition of nursing programme from the lecturers' and the students' point of view. In addition, it has sought to identify the relationships between the independent variables i.e. characteristics of the respondents and outcome variable i.e. evaluation of the nursing curriculum from the respondents' viewpoint. A combination of "Descriptive Methodology", "Evaluation Research" and "Correlational Study" therefore has been chosen for this study. The use of two or more methods of data collection in the study of some aspects of human behaviour is called "Triangulation". This multiple methods differs from the use of a single methods in many ways.

"A typical combination of methods is the so-called triangulation. It is an important method for contrasting and comparing different accounts of the same situation. Through identifying differences in perspectives, contradictions and discrepancies can emerge which help in the interpretation of a situation and the development of practical theory. In addition, where the different perspectives agree with one another, the interpretation is considered more credible."

(Altrichter and Posch and Somekh, 1993, p.117)

Denzin (1978a) described the various dimensions of the triangulation in educational evaluation. He listed the different types of triangulation as follows:

- **data triangulation** includes: time, space and person triangulation.
- **methods triangulation** comprises: within methods (combination of two or more similar data collection approaches, qualitative or quantitative, in the same study) and between methods (the use of a quantitative measurement approach and a qualitative data collection approach in one study to measure the same unit).
- **investigator triangulation** is when two or more research trained investigators with divergent backgrounds explore the same phenomenon.
- **multiple triangulation** occurs when more than one type of triangulation is used in the analysis of the same event.
- **analysis triangulation**: the use of two or more approaches to the analysis of the same set of data for the purpose of validation. Comparing results of data analyzed using different 'families' of biostatistical tests or differing qualitative analyses techniques to assess similarity of findings enables researchers to note similar patterns and thus verify findings.

The technique which has been applied for this research is following kinds of triangulation:

- **space triangulation** (different nursing faculties);
- **person triangulation** (nursing lecturers and students);
- **between methods triangulation** or more than one methods of

- data collection (questionnaires as quantitative and interview as qualitative approaches);
- **data analysis triangulation** (different statistical tests).

6.3 Population/sampling: Runyon and Haber (1967) defined the population of an investigation as "a complete set of individuals, objects, or measurements having some common observable characteristic" (p.2).

The population of this research are chosen from two groups:

- First group was all of the lecturers who were instructing clinical and theoretical courses of the baccalaureate students in the Nursing and Midwifery Faculties of the Medical Science Universities in Iran. They were teaching as members of different departments in those Faculties. The departments in the nursing faculties are Departments of: Nursing Management, Health Nursing, Mother and Child Health Nursing, Medical-Surgical Nursing, Paediatric Nursing and Psychiatric Nursing.
- Another group of samples of this research comprised all of the nursing students who had passed successfully practical and theoretical assessments in the B.Sc. courses and were awaiting final and comprehensive examinations for graduation.

Lecturers who were teaching the life and social science courses related to nursing have not been asked. Earlier in Chapter One, it was mentioned that why these lecturers have not enough information about the nursing programme, nature of nursing and duties of the graduated nurses. Therefore, they were not sufficiently informed to be able to contribute to this research.

Nursing staff of the teaching hospitals have not been asked about the merits of the nursing curriculum. Because, the majority of them had been graduated by the previous national nursing programme and at the time of inquiry they did not know about the current nursing courses and

also life and social science courses related to nursing.

The samples of this research have been chosen by two types of sampling and in two stages: **Stratified and Random sampling.**

"A *stratum* is a subpopulation, and *strata* are two or more homogeneous subpopulations. To use this method:

- 1. Select a population and determine the relevant strata,**
- 2. Sample a number of people in each stratum. The number in a sample should reflect the proportion of the group in the total population,**
- 3. After decision on the strata and population, choose the subjects within each of the categories according to random sampling methods."**

(Wilson, 1989, p.259)

In order to determine the samples, at first, the number of the teaching staff and also the last term students of each nursing faculty have been obtained from The Ministry of Health (selection of the population). Regarding the one of the purposes of the research was to compare the lecturers' responses with those of the students, the faculties which have been established recently and/or had not any last term students were eliminated (determination of the relevant strata).

Furthermore, an appropriate number of the lecturers' and the students' questionnaires have been distributed for each faculty in the capital city of Tehran and the other cities (the number of people in each stratum or the appropriate proportion).

• **Samples of the lecturers' questionnaire:** The total number of the lecturers in the faculties which had the students in the last term of their study was 695 persons. This number included 470 in three nursing faculties of the capital and 225 in the twelve faculties in different

provinces. The number of the lecturers in different nursing faculties was varied. However, they were between 150-160 in the capital and 15-20 in the provinces.

The size of the sample of the lecturers' group was calculated from the results of a pretest on the basis of the following formula:

$$n = (Zs)^2 + (E)^2$$

(Ott and Rexroat and Larson, 1992, p.232)

Where: s (standard deviation) = 2.48, $Z = 1.96$, $E = Z\mu = 0.48$, and for a 95% confidence interval on μ , an approximate sample size 103 was obtained i.e. approximately 15% of the population.

In some nursing faculties, some of the lecturers were engaged in two different educational groups in order to cover the shortage of the teaching staff. For example, while those lecturers were teaching theoretical subjects of the Medical-Surgical nursing, they instructed the apprenticeship of the Health nursing course. Hence, it was not easy to determine the exact number of the lecturers in each faculty. To provide the opportunity for responding to the questionnaire by each nursing faculty and all educational groups, six questionnaires were sent to each nursing faculty of the provinces ($n = 72$ questionnaires) and the rest of them ($n = 31$ questionnaires) were distributed almost equally among the faculties of the capital. The lecturers' number in the capital's faculties were more than the lecturers in the provinces' faculties. Although it seems that the ratio of the questionnaires' distribution in the capital and the provinces was not fair, but it should be considered that only the faculties of Tehran have offered the Master degree in nursing education before 1994-95 academic year and since that time some of the provinces' faculties have gained authority for a Master's degree in nursing

education. Therefore, the capital's faculties had some students at the M.Sc. level and many of the lecturers were involved in teaching for both the Master degree and the Baccalaureate degree. The general view of sampling among the lecturers is demonstrated by numbers in Table 6-1.

Table 6-1: Sampling distribution (lecturers)

	Tehran	Provinces	Total	Percentage
Nursing Faculties	3	12	15	-
Lecturers	470	225	695	100
Lecturers' average in Faculties	150-160	15-20	-	-
Samples	31	72	103	15
Returned questionnaires	25	46	71	69

Comparison of the number of the returned questionnaires in different educational groups shows that some groups of the lecturers were more enthusiastic than the others to return their questionnaires. The return rates of the lecturers' questionnaire related to the nursing departments are indicated by Table 6-2.

Table 6-2: Return rate of the lecturers' questionnaire in each professional groups

Nursing courses	Return Rate(%)
Health nursing	59
Nursing Management	73
Medical-Surgical nursing	86
Mother and Child Health nursing	63
Paediatric nursing	67
Psychiatric nursing	54
Average	69

• **Samples of the students' questionnaire:** Similarly, the nursing students' sample was chosen (the stratified sampling at the first time and then the simple random sampling). They were selected among the 1495 nursing students who had enrolled for the final examination for the license to practice nursing as a registered professional nurse across the country. This number consists of 910 students in three nursing faculties in the capital and 585 students in the faculties of twelve provinces.

According to the results of a pretest, the number of the students' sample obtained was approximately two hundreds i.e. 13% of the population. The formula was: $n = (ZS)^2 + (E)^2$, a 95% confidence interval on μ and $s =$ standard deviation = 3.48, $Z = 1.96$, $E = Z\mu = 0.48$.

According to the number of the eligible students, and also equality of their educational conditions across the country, this number of the students' questionnaire was equally distributed to all of the mentioned faculties. Therefore, for each faculty in the provinces seven questionnaires were allocated ($n = 84$ questionnaires) and 39 of them was for each faculty in Tehran ($n = 116$ questionnaires). The sampling frame among the students is exposed by Table 6-3.

Table 6-3: Sampling distribution (students)

	Tehran	Provinces	Total	Percentage
Nursing Faculties	3	12	15	-
Students	910	585	1495	100
Sample	116	84	200	13
Returned questionnaires	77	59	136	68

After determination of the appropriate numbers of questionnaires, both questionnaires of the lecturers' and the students' were sent to the dean of

the targeted nursing faculties. A letter was accompanied with each set of the questionnaires (the lecturers' and the students' questionnaires for each faculty) by which the dean of each faculty was requested to distribute the questionnaires among the lecturers and the students randomly and according to a guide direction so that all educational groups of the lecturers would have got the chance to response to the questionnaire (confer to Appendix A1 for detail). Some of the lecturers' and students' questionnaires were not returned in the given time (one month). As it was stated earlier, the questionnaires were anonymous and the commencing of summer holidays in Iran made it difficult to receive any more responses by sending a reminder.

Table 6-4: The number of the unreturned questionnaires

Faculties	Lecturers	Students
Tehran	6	39
Provinces	26	25
Total	32	64

Another method of sampling, **purposive sampling**, that is a kind of non-random sampling was applied for the lecturers' interview. The interviewees were chosen among the experienced, qualified, informed lecturers who were also the head of their related nursing departments in the largest and preceded faculty in the country.

6.4 The Research Variables: In this research, the dependent variable is the level of scores of different components of the curriculum which have been identified by the respondents (the lecturers and the students). The independent variables are the characters of the respondents (see

Appendix A3) and include:

- Age of both groups of the respondents,
- Gender of both groups of the respondents,
- Clinical nursing experience (for the students prior to commencing the nursing course and for the lecturers before teaching in nursing faculties),
- Teaching experience of the lecturers,
- The last educational degree of the lecturers,
- Educational major of the lecturers,
- B.Sc. graduating years of the lecturers,
- M.Sc. graduating years of the lecturers,
- Educational responsibility in addition to teaching.

6.5 The Method of Data Gathering: As Walker (1985) stated:

"In many projects the most significant findings have emerged from points at which different methods have complemented each other."

(Walker, 1985, p.79)

Both of qualitative and quantitative methods have some advantages and some disadvantages. The qualitative and quantitative approaches therefore have been applied to decrease the errors in process of data collection. In Chapter Four, it was stated that a curriculum has four components: Intention, Content, Methodology, and Evaluation. Each of these components have been evaluated from the lecturers' and the students' point of view. However, the first component, i.e. intention of the curriculum as Marsh (1992) believed, is broadly phrased in statements.

"Aims, because of their open-ended nature, will never be completely achieved. They provide general guidelines for teachers and are not dreamy visions of a distant state."

(Marsh, 1992, p.86)

Therefore, subgroup of intention or aim, i.e. 'Goal' of the programme that is easy to be understood by the respondents has been evaluated from their point of view. The lecturers answered to the ten statements and the students replied to the three statements which were allocated for each component of the nursing, life and social science courses related to the nursing curriculum.

6.6 Instruments of Data Collection As it was mentioned in Chapter Five, none of the research instruments is perfect and application of one of them is not bias-free. In other words, all of the research instruments have some advantages and also disadvantages that the use of a combination of them can usually cover the gaps and support the strengths of each other. Therefore, the study benefited from two approaches of data gathering by questionnaire and interview.

6.61 The Lecturers' and the Students' Questionnaires: The quantitative approach of the data collection consisted of two different questionnaires for the lecturers and the students (see Appendix A2).

"The basic assumption that underlies all attitude scales is that it is possible to discover attitudes by asking individuals to respond to a series of statements of preference. The pattern of responses is viewed as evidence of one or more underlying attitudes. Attitude scales are identical to rating scales in form, with words and numbers placed on a continuum. Subjects are asked to circle the word or number that best

represents how they feel about the topics included in the questions or statements in the scale."

(Fraenkel and Wallen, 1993, p.114)

The questionnaires had been conducted with the consideration that the attitude scale would be appropriate to discover the preferences of the respondents. As the faculties in the capital were more accessible, the questionnaires were administered personally by the researcher. However, the questionnaires allocated to the provinces were mailed accompanied with a letter requesting the respondents to complete and return the questionnaires by a given date (after one month maximum). The questionnaires did not ask the respondents to write their names therefore, it was not possible to know the names of the individuals who had responded or had not. On the other hand, the summer holidays had made it difficult to contact the respondents, or send them follow-up letters. Indeed, the reminder could have caused some overlap responses rather than increasing the rate of response returning.

The content of the questionnaires was derived from the literature, textbooks, the researcher's supervisors, the researcher's colleagues, and finally the results of pre-tests. To validate the questionnaires, the researcher's supervisors and colleagues had been requested to give their viewpoints about education and nursing. A commonly used attitude scale in educational research is the **Likert scale**.

"In the 'Likert' method of attitudes measurement a person is presented with a number of statements which are clearly favourable or unfavourable towards the attitude object and is asked to rate his agreement with each one on a five-point scale. An individual's total attitude score is the sum of the scores for all the items in the questionnaire."

(Radford and Govier, 1980, p.652)

Consequently, the items of the questionnaires were ranged from 'strongly disagree' to 'strongly agree' to be ticked by the respondents in the appropriate box. In order to change the quality options to the quantities, zero was a very low grade and four was a very high grade. To decrease halo effect, some items were stated negatively but, the scores allocated to them were counted reversly.

"Whenever judges rate people on a series of traits or behaviours, there is a possibility that they will make their judgements on the basis of global impressions of the people rather than on the specific traits. This widely encountered phenomenon in the rating process has been termed the halo effect."

(Anderson, Ball and Murphy, 1976, p.189)

The questionnaires have a limitation which is related to the quality of the items of the questionnaires. Necessity of the collection of many information about all components and courses of the curriculum and also avoidance of developing very long questionnaires led to the application of multiple issues in some items of the questionnaires. Therefore, there is not a certainty which of the issues are addressing by the respondents.

• The lecturers' questionnaire:

- Section One was about the background of the respondents or demographic data and included: her/his gender, age group, their last degree, name of their departments, number of B.Sc. graduating years, number of M.Sc. graduating years, their teaching experience, their clinical experience, and finally their responsibilities in the nursing education other than teaching.
- Section Two consisted of forty items with a grading system similar to the students' questionnaire style. There were ten

statements for every components of the nursing curriculum (goal, content, methodology, evaluation). The instructors responded to the items according to their field of study and teaching. For instance, educators who were working in Medical-Surgical Nursing Department answered to the components of the curriculum about just Medical-Surgical Nursing. Hence, all fields of the nursing and components of the curriculum had been evaluated by different respondents who were teaching in their related field.

- **The students' questionnaire:**

- Section One of the questionnaire was about demographic data and comprised: her/his gender, age group, nursing experience prior B.Sc. studying.
- Section Two of the questionnaire had twelve items about total nursing courses. Every three statements were related to each components of the curriculum (goal, content, methodology, evaluation). The students were requested to respond to all items which were repeated for each of the nursing, life and social science courses related to nursing. Therefore, all components and courses of the curriculum had been evaluated by the students who had passed all courses of the curriculum successfully and were enrolled in the final examination for graduation.

6.62 The Lecturers' Interview: Another instrument of this research was face-to-face interview with some lecturers who were the head of different nursing departments. The authority of the research was submitted to the Head of Nursing Departments. The interviewees expressed their agreement by giving an appointment and accomplishment of the interview in her offices.

The chosen pattern of the interviews was the lecturers' questionnaire as the interview guide, but interviewees could specify their points of view in detail. There are two basic kinds of interviewing techniques: Structured, Unstructured. In the structured interview as Dempsey and Dempsey (1992) explain "the interviewer has a list of prepared questions that the researcher believes will provide a format for the respondent's answers concerning the researcher's project"(p.148). All interviewees were asked the same basic questions in the same order. They answered the questions according to the own field of study and responsibility. The questions were worded in a completely open-ended format. The instrument had forty items that each ten statements of it were related to the one of the components of the curriculum. The items fell into following category:

- statements 1-10 about Goal part of the curriculum;
- statements 11-20 about Content part of the curriculum;
- statements 21-30 about Methodology part of the curriculum;
- statements 31-40 about Evaluation part of the curriculum.

At first, the interviewees responded to the questionnaire and then they were requested to discuss about each of the items of the questionnaire one by one and in depth. The interviewer usually asked: "Anything else?" "Tell me more" or "How do you mean that?" The researcher wrote instantly the answers and for avoidance of the interpersonal aspects of the interview in a biasing way, she returned the answers to the respondents in order to clarify the ambiguous points. Then the responses were summarised and at the end, all of the lecturers' recommendations and criticisms were noted in order to cover all of the predetermined topics or questions.

This kind of interview approach has some advantages as Patton

(1987) stated:

"The advantage of an interview guide is that it makes sure the interviewer has carefully decided how best to use the limited time available in an interview situation. It helps make interviewing different people more systematic and comprehensive by delimiting the issues to be discussed in the interview."

(Patton, 1987, p.111)

Regarding the control of error resources for structure and content of the lecturers' questionnaire, the remain source of error could be process of administration of interview.

6.7 Criteria for Assessing Measuring Tool: Two important factors, reliability and validity have been taken into account in order to decrease error resources in this research.

6.71 Reliability: where each member of a population has been measured on two separate occasion, two observations are available for each member. Both are presumed to be measures of the same attribute, and both are subject to error. The Test-Retest method is appropriate for determining the quality of measures. Other devices designed to assess characteristics known to be relatively stable over the time period under investigation.

"The same measuring instrument is applied on two occasions to the same sample of individuals. When the instrument is a psychological test, the test is administered twice to a sample of individuals and the scores correlated."

(Ferguson and Takane, 1989, p.469)

Test-Retest procedures are usually employed to determine the reliability

of affective measures. To estimate the Test-Retest reliability for a given measure Waltz and Strickland and Lenz (1991) listed the following issues:

- "• Administer the method or device under standardized conditions to a single group of subjects representative of the group for which the measure was designed.**
- Re-administer the same test under the same conditions to the same group of subjects. Usually the second Management occurs approximately two weeks after the first, although the time may vary slightly from setting to setting. It should be noted that it is important to ascertain that no activities have occurred between first and second Management which may have affected the stability of the characteristic being measured.**
- Determine the extent to which the two sets of the scores are correlated. When data are measured at the interval level, the Pearson product-moment correlation coefficient (r_{xy}) is taken as the estimate of reliability. When data are measured at the nominal or ordinal level, a non-parametric measure of association, such as chi square-based procedures or Spearman rho, is used."**

(Waltz, Strickland and Lenz, 1991, p.164)

The results of Test-Retest procedure indicated that the correlation coefficient of the Test-Retest of the lecturers' questionnaire was 0.53 (which were completed by 12 lecturers). After item analysis, some of the items that had a lot of different answering were omitted. The correlation coefficient of the Test-Retest of the students' questionnaire was 0.44 (which were completed by 15 students). As Fraenkel and Wallen (1993) pointed out: "When testing the reliability of a questionnaire the range of 0.41 to 0.60 is large enough to be of practical as well as theoretical use"(p.213). Therefore, both of the questionnaires were regarded as reliable.

6.72 Validity: Waltz et al (1991) described the validity and its different kinds as follows:

"The validity is referred to the extent to which a measure achieves the purpose for which it was intended. When the intent is to determine how an individual performs at present in a universe of situations that the measurement is claimed to represent, 'content validity' is of importance. To determine content validity, the list of the behavioural objectives that guided the construction of the tool, a definition of terms, and a separate list of items designed to specifically test the objectives are given to at least two experts in the area of content to be measured."

(Waltz et al, 1991, p.172)

In this research, it was necessary to translate the questionnaires and interview from English to Persian and then from Persian to English. Meanwhile, the cultural differences could have caused some changes in concepts of the instruments. Therefore, both of content and construct validity were conducted to obtain relevant data to what was being measured.

6.8 Data analysis: Raw data, observations in their original form, are often a mass of numbers or symbols that have little or no meaning in themselves. Any research involves the making sense of those data in some meaningful fashion, and then, usually on the basis of statistical tests, drawing conclusions. Major problems in the analysis of the data are described briefly:

- Regarding the involvement of multiple issues in some items of the questionnaires, in some cases the respondents had written their selections in recognition of each issue vis-a-vis. Thus, the raw data were treated by

measurement of score of those items as a mean of the choices. It can be seen that (by conferring to the questionnaires) the number of multiple issues in the lecturers' questionnaire is more than the number of them in the students' questionnaire. High rate of different answers in test-retest approach of reliability measurement, had led to the increasing of the standard deviation of the questionnaires and therefore, the rate of needed sample have increased. It means that the rate of sample among the lecturers (15%) which their questionnaire had more multiple issues was more than the rate of sample among the students (13%) which their questionnaire had less multiple issues.

- There were some missing values in the answers of the respondents to the questionnaires which the study have excluded the concerned items in the calculations. For instance, responding to the age item was missed by 10% of the lecturers.

To organize and compute the measures the tables were formed to count frequency (f) of demographic data and crude answers of the lecturers and the students to the different components of the curriculum. Then, the data were promoted to percentages scores to make them comparable to each other. In order to make inferences about the characteristics of the populations from the characteristics of the random samples drawn from the populations, inferential statistics were applied. In this regard, some tests were used as following:

- to analyse the variances (the F-Test and t-Test for quantitative data, the Kruskal-Wallis Test and the Kolmogorov-Smirnov Test for qualitative data);
- to reveal the relationship of the variables (Pearson-Product moment correlation Test for quantitative data, The Z-Test for

qualitative data and also the Tchuproff contingency coefficient for measurement of the strength of contingency coefficient).

The references of the above tests are mentioned in Bibliography.

6.81 Analysis of the Lecturers' questionnaire:

- **Section One:** the first question was about the sex of the lecturers whose responses were nominal. The second question was about age group and the answers were interval. The third question was about their last academic degree and the responses were nominal. The fourth question was about their graduating majors and the answers were nominal. The answers of questions Five, Six, Seven and Eight were interval and they were about: since B.Sc. graduating years, since M.Sc. graduating years, clinical experience and teaching experience. Finally, the last question was whether they had any educational responsibilities in addition to their teaching tasks or not, and the responses were nominal (Appendix A3 - Figures A1-A9).

- **Section Two:** the answers were qualitative data that was coded and modified to the quantitative data. The respondents chose one of the five items that were scored from zero to four for positive questions and vice versa for negative questions (questions 5, 10, 12, 14, 15, 20, 25, 27, 30, 33, 36 were negative, the results are shown in Figures 7-1 and 7-2). Tables 7-1 and 7-4 illustrate the total perception of the lecturers about every components and courses of the nursing curriculum.

6.82 Analysis of the Students' questionnaire:

- **Section One:** The first item was about their age and had an interval answer. Their sex and any experience in nursing prior the B.Sc. studying were the two remaining questions which the responses to them were nominal (Appendix A3 Figures A10-A12).

• **Section Two:** The students responded to the four components of the nursing, life and social science courses related to nursing. The nursing courses included: Health nursing, Mother and Child Health nursing, nursing Management, Medical-Surgical nursing, Paediatric nursing and finally Psychiatric nursing (Figures 8-1 to 8-7 are related to the respondents' opinion on these courses). The life and social science courses related to nursing consisted of: Anatomy, Biochemistry, Biology, Biophysics, Educational Technology, Epidemiology, Growth and Development, Microbiology, Nutrition (regular and therapeutic), Parasitology, Pharmacology, Physiology, Sociology, Statistics and Teaching Approaches. The second section of the students' questionnaire was scored similar to the section two of the lecturers' questionnaire (negative questions were questions 2, 3, 5, 8 and the results are shown in Figures 8-8 to 8-24). Tables 8-1, 8-4, 8-7, 8-10 present the total perception of the students about every components and courses of nursing, life and social science courses related to nursing curriculum.

All of the mentioned information were crude. In other words, effects of the independent variables on the perceptions of the respondents were not obvious. Therefore, cross tabulated tables were introduced to indicate the scores of every components of the curriculum by the different variables (Tables 7-5 to 7-23 and 8-13 to 8-22).

6.83 Analysis of the Lecturers' Interview: It was mentioned earlier (in this chapter) that in order to facilitate organisation and analysis of the data, the context of the lecturers' questionnaire was used as the instrument of the structured interview for collecting the data in details. The instrument had forty items that each ten statements of it were related to the one of the components of the curriculum. The questions were worded in a completely open-ended format. All interviewees were asked the same basic questions in the same order. Although the analysis of the

obtained data was difficult however, the informants stated their viewpoints according to the own field of study and responsibility. It means that generalization of the interviewees' statements was not possible for the other nursing groups. Hence, it was not necessary to make quantitative comparisons across the interviews. Much information about different components of the curriculum from the Head of Nursing Departments' viewpoint was collected therefore, in order to mention the data in the thesis the researcher had to pick the most related and straightforward data up to the aim of study. A complete set of the data will be reported to The Ministry of Health later. A set of the items related to the components of the curriculum as the interviewees' viewpoint in each educational group will be described in Chapter Seven.

In each educational group the results of questionnaire and interview were compared and contrasted together. Regarding the use of one interviewer for carrying out the interviews in all of the educational groups, the interviewer's effect (bias) was considered equally.

The score of the obtained data by questionnaires was calculated according to the Likert Scale. In other words, to compare the different components and different courses of the nursing curriculum, the obtained scores were compared to each other and in fact they are *Norm-referenced* points. There is a very important point that should be noted carefully. If the scores seem low, this does not mean that the curriculum is not at acceptable level. Regarding this point, in order to judge about the scores of each components of the nursing courses of the curriculum from the lecturers' and the students' point of view, the gained scores were categorized in the following category:

- 0-19, very poor;

- 20-39, poor;
- 40-59, fair;
- 60-79, good;
- 80-100, very good.

6•9 Access and Ethical issues: The following points were considered as the access in this study:

- The student was introduced to the Ministry of Health, Students Affair Branch by her supervisor to get the permission for field study;
- Authority for the research was submitted to the Dean in each nursing faculty;
- The researcher introduced herself to the research subjects (in the cover sheet of the questionnaires indirectly and also in the interviews directly);

The ethical issues involved were:

- The questionnaires were anonymous;
- The aim of study was stated in the cover sheet of the questionnaires and also in the interviews;
- In cover sheet of the questionnaires the research subjects were assured that the obtained data will be recorded confidentially.

6•10 Summary: This chapter described the details of methodological issues which were adopted by the study. Those issues in terms of appropriate points for this research were rationalized in Part Three and were concluded at the end of each section of Chapter Six. The chapter involved how: the pilot and main study were carried out, the design of evaluation was clarified, the target populations were chosen, the samples

were selected, the instruments were validated, the variables were defined, and finally the collected data were analysed. The applied design of the investigation was based on "Triangulation" technique which contrasts and compares different accounts of the same situation. The design was a combination of "Descriptive Methodology", "Evaluation Research" and "Correlational Study" in order to describe the condition of the national nursing programme in Iran from viewpoints of two stakeholders of the curriculum, nurse teachers and nurse students. The samples were chosen by two types of sampling and in two stages: Stratified and Random Sampling. The instruments of data collection were face-to-face interview, direct administering two kinds of questionnaires, and mailing other questionnaires. The process of data analysis and application of statistical approaches were described in terms of descriptive and inferential statistics. In addition, the relationships between the characters of the respondents and their opinions/attitudes were examined by correlational studies. The measures taken during the fieldwork are displayed in Appendix A1.

PART FIVE - THE RESULTS

Introduction: The focus of this research was the curriculum of nursing education in Iran. The overall aim was to enhance the existing curriculum for nurse education. The research utilized the opinions of the two main stakeholders in the nursing curriculum, the lecturers and the students. The respondents' points of view were attained by use of two instruments, two questionnaires and an structured interview.

At the begining of this part it is necessary to point out the important issues which may affect the results of the study. In the last chapter it was mentioned that regarding the application of multiple issues in some items of the questionnaires the raw data were treated by measurement of score of those items as a mean of the choices. There were also some missing values which were excluded from measurement of the scores. In addition, interviews with the Head of Nursing Departments provided much information about different components of the curriculum rather than conduct a systematic analysis of these data, the information obtained from the interviews was used to supplement the quantitative data contained in this section of the research. Therefore, in order to mention the data in Part Five the researcher picked the most related and straightforward data up to the aim of study. At the end of Chapter Seven, the most important results of the interviews are presented.

The findings of the research are illustrated and described in the following two chapters. Chapter Seven is concerned with the results of the lecturers' questionnaires and interviews. The next chapter, Chapter Eight, describes the findings of the students' questionnaire. The results are organised in the following categories: demographic data, measures

of central tendency, measures of association.

- **Demographic data** on the lecturers and the students are indicated by Figures **A1-A9** (lecturers) and Figures **A10-A12** (students) which are provided in the Appendix.

Tables **7-6** to **7-24** and **8-13** to **8-22** illustrate the scores of each part of the curriculum according to the demographic data of the respondents.

- **Means and Standard Deviations** are then presented. The perception of the respondents on nursing, life and social science courses relating to nursing are illustrated.

All components of the nursing courses of the curriculum (goal, content, methodology, evaluation) were evaluated by the lecturers and the students. According to the **Likert Scale**, the sum of the crude numbers of the choices made by the lecturers and the students were multiplied by their indexes, then the scores of each component were calculated (from zero for strongly disagree to four for strongly agree).

In Chapter Seven, Figure **7-2** indicates the mean score of the lecturers' perception of each educational group on their field of teaching separately. In total, all the nursing courses, are illustrated by their means and standard deviations in Graph **7-1**.

In Chapter Eight, Graphs **8-1** to **8-6** present the students' perception of each nursing courses separately. All the nursing courses, are all together shown by Graph **8-7**. Graphs **8-8** to **8-23** illustrate each of the life and social science courses relating to nursing separately. Finally, all the life and social science courses relating to nursing from the students' viewpoint are altogether indicated by Graph **8-24**. Scores of every component of the curriculum are indicated as:

- nursing courses from the lecturers' point of view and also means

and standard deviations of these scores by Tables 7-2 and 7-5 in Chapter Seven.

- nursing, life and social science courses related to nursing from the students' point of view and also means and standard deviations of these scores by Tables 8-1, 8-4 and 8-7 in Chapter Eight.

Tables 7-2, 8-1, 8-7 illustrate two kinds of data: the information about the different courses (nursing, life and social science related) by the rows, and also information about the different components (goal, content, methodology, evaluation) of the curriculum by the columns. Therefore, both of the dimensions are analysed and discussed in two stages:

- at first, the **descriptive statistics** were applied to understand important features of the data. In order to obtain meaningful data for comparative purposes, two main measurements of central tendency, namely, mean and standard deviation were used. The purpose of these statistics was to answer the first research question viz, "What was the grade level of each component of the curriculum from the lecturers' and the students' point of view?".

- at the second level, **inferential statistics** were utilised to make an inference about a population based upon the information contained in the sample. The aim was to answer those research questions that were concerned with "values of the respondents' viewpoint on scores of different components of the curriculum". Inferential statistical tools were used to draw the inferences concerning the relationships between data obtained by sampling and their conditions in the population. There are several tests which can be used to compare means and variances.

To determine whether several means differed significantly from

each other or not, the following tests according to the nature of data and also the series of data were applied:

- parametric analysis of variances: the F-Test, the t-Test;
- nonparametric analysis of variances: the Kolmogorov-Smirnov Test, the Kruskal-Wallis Test.

• **Measures of association:** in psychology and education many situations arise which might involve two or more variables. One of the primary purposes of science is to discover relationships among phenomena with a view ultimately to predicting and, in some situations, controlling their occurrence. There are numerous techniques devised to provide representations of relationships. Those techniques are known as measures of association that some of them are specifically for nominal scales, others for ordinal scales, and some others for interval or ratio scales. The aim here was to answer those research questions that were concerned with:

- association between perceptions,
- strengths of the associations.

The sample correlation coefficient is illustrated by r and the population correlation coefficient is indicated by ρ . The Pearson Product Moment (r) for quantitative or interval data and the Tchouproff contingency coefficient (ρ_T) for categorical or nominal data were applied to discover whether there was any association between:

- each component of the curriculum from the lecturers' and the students' point of view,
- the characters of the respondents and their gained scores.

Then, to provide an adequate explanation of r and to illustrate its specific applications, analysis of linear regression was applied.

These two statistics describe the relationship between two variables (correlation r) and the use of one variable to predict the value of another variable (linear regression R).

At the end, it should be noted that similar to most of the social and psychological research, criterion for statistical significance in this study is $\alpha = .05$. It means that the level of confidence for acceptance or rejection regions of inferences is at 95% probability or $p < .05$. In other words, if the α level is set at .05, the null hypothesis is rejected if the absolute value of Z obtained is greater than 1.96.

CHAPTER SEVEN

FINDINGS OF THE RESEARCH: THE LECTURERS

7.1 Demographic data

The following findings emerge from Figures A1-A9 (see Appendix):

- most of nursing lecturers in Iran (93%) were female (Figure A1, p. 366).
- more than two thirds (71%) of the respondents were aged between 30-50 (10% of the lecturers failed to answer this question) (Figure A2, p. 366).
- most of the respondents (73%) had a higher degree, mostly the M.Sc. degree, though a further 7% of the respondents were studying for a Ph.D. degree (Figure A3, p. 367).
- there are many subjects which fall in the Medical-Surgical Nursing category. Those courses constitute the largest educational group in each nursing faculty. In this research, nearly one third of the respondents were teaching in this group. Meanwhile, the Psychiatric Nursing group was the smallest (11%) group of the respondents (Figure A4, p. 367).
- as Figure A5 shows, many of the respondents (28%) graduated 20-24 years ago. No lecturer graduated less than five years ago. This indicates the emphasis of the nursing authorities to employ the lecturers who graduated at least five years before teaching (Figure A5, p. 368).
- in recent years, the expansion of M.Sc. courses in nursing and also an increase in the number of the students taking the B.Sc.

degree has led to an expanded recruitment to the M.Sc. in nursing faculties. Figure A5 indicates that 52% of the lecturers graduated M.Sc. less than 5 years ago and just 3% of them graduated more than 15 years ago (Figure A6, p. 368).

- the expansion of M.Sc. courses in nursing also caused the absorption of the nurses from the clinical areas into teaching in the faculties. Figure A7 illustrated that just 4% of the respondents had more than 15 years clinical experience alongside or before the nursing mentorship. More than half of the lecturers had less than 5 years clinical experience (Figure A7, p. 369).
- less than one third of the lecturers (28%) have been teaching nursing courses for 5-9 years. Only 4% had over 25 years of teaching experience (Figure A8, p. 369).
- most of the lecturers (59%) had only responsibility for teaching and training in their nursing faculties and 27% of them were, in addition to their teaching duties, Head of Educational Groups and the rest of them (14%) had Educational Deputy experience (Figure A9, p. 370).

7•2 The lecturers' viewpoints on different components of the Nursing courses: these scores are indicated in two levels, the raw scores (7•21) and the percentage scores (7•22).

7•21 Raw scores

The number of lecturers in the educational groups were different. Therefore, the level of scores gained by each group varied. In order to compare the scores with each other, the raw scores were promoted to

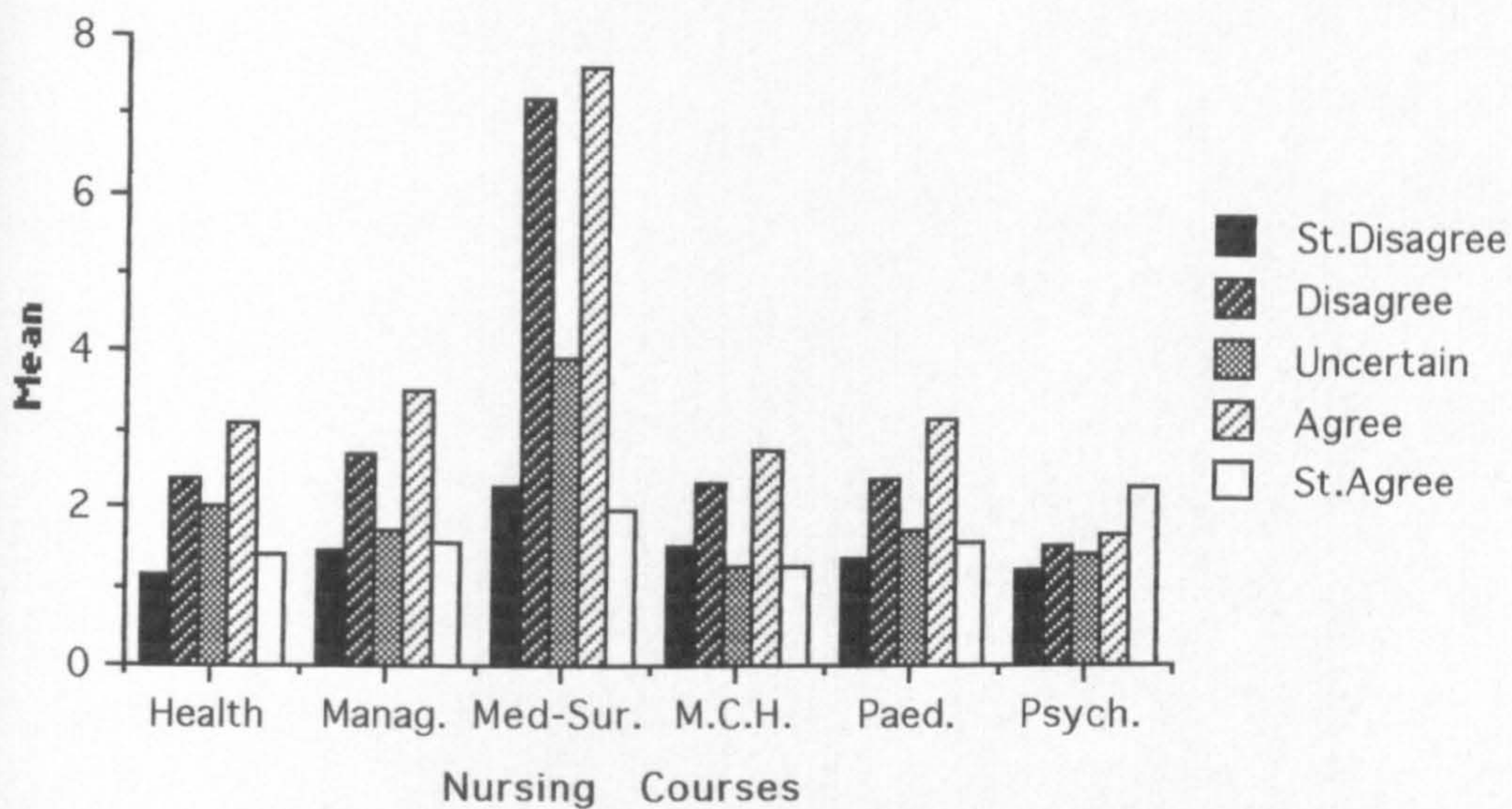
percentage scores. As Table 7-1 indicates the number of members in each educational group (therefore, the standard deviation of their responses as an indicator of dispersion) was small and they could not be referred as valid indicators.

Table7-1: The educational groups and the lecturers' response rates to the questionnaire in the sample (n = 71)

Educational Groups	Response Rate
Health nursing	10
Nursing Management	11
Medical-Surgical nursing	23
Mother and Child Health nursing	9
Paediatric nursing	10
Psychiatric nursing	8
Total	71

To facilitate the comparison of different choices of the nursing courses from the lecturers' viewpoint the means of those selections are illustrated together by Figure 7-1:

Figure 7-1: Mean of the nursing courses from the lecturers' point of view



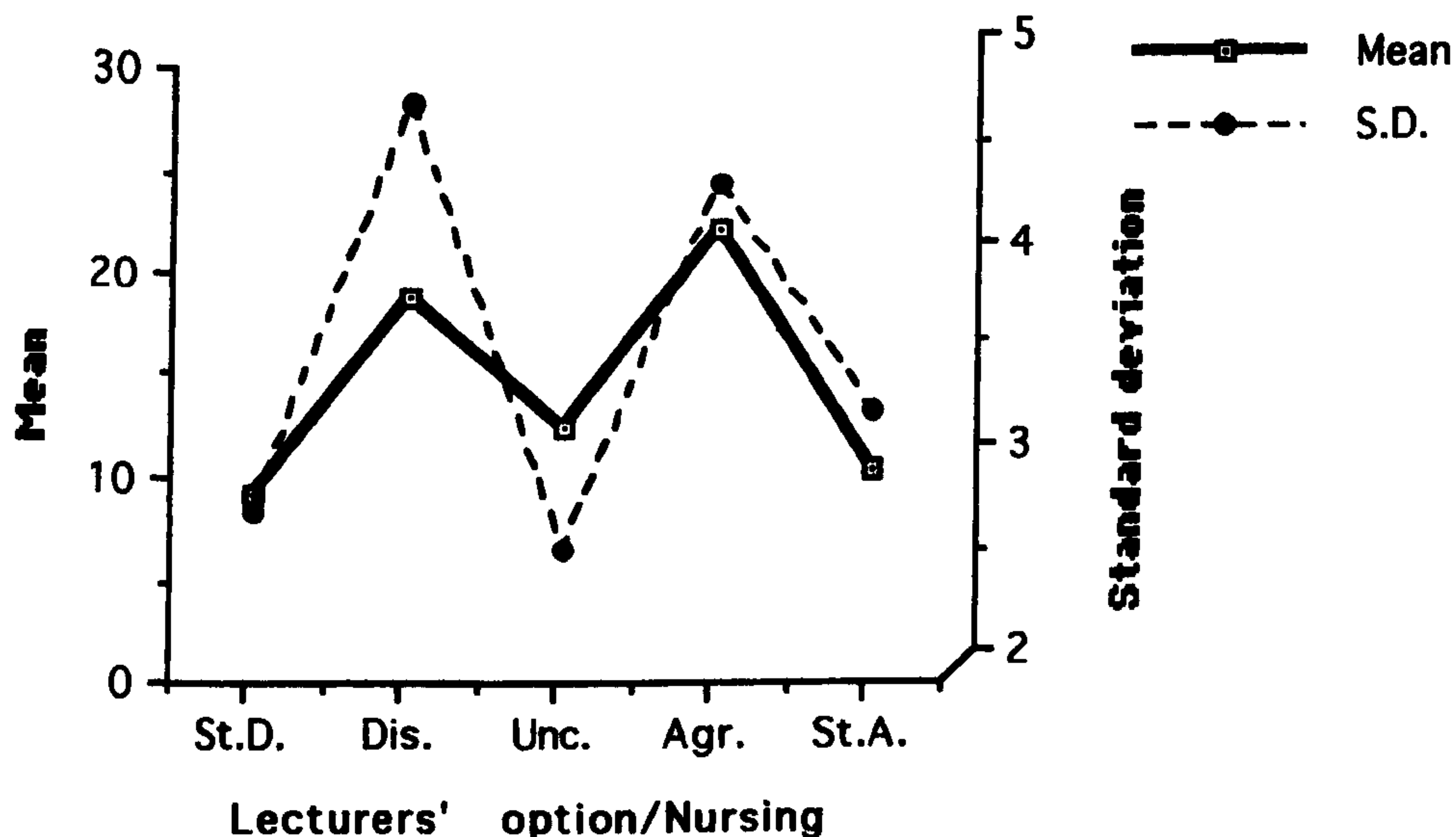
(Health = Health, Manag. = Management, Med-Sur. = Medical-Surgical, M.C.H. = Mother & Child Health, Paed. = Paediatric, Psych. = Psychiatric nursing)

- Similarities between the responses of mentioned nursing groups were:
 - most of those educational groups had chosen "Agree" options more than the other options, except the Psychiatric Nursing group for which the most frequent options was "Strongly agree";
 - the numbers of respondents in each educational group were approximately equal, except the Medical-Surgical Nursing group in which the respondents' number (23 persons) was about double the other groups;
 - in total, the lecturers highest scores was in the "Evaluation" component and their lowest scores into the "Methodology" component of the nursing curriculum. This indicated that while they believed that the evaluation is carried out properly, they were not fully satisfied with the teaching-learning process.
- Difference among the groups was:
 - the highest and also the lowest scores of different components of the curriculum were gained by the educational group of Mother

and Child Health nursing (81.7% for evaluation and 44.4% for Methodology components).

In total, seventy one nursing educators responded to the lecturers' questionnaire. Each person, as the member of each educational group, answered items of the questionnaire relevant to his/her own field of teaching. With regard to the fact that the curriculum comprised different fields and courses, the idea of each one group of the lecturers alone could not be helpful for evaluation of the whole of the curriculum. Therefore, the opinions of all educational groups of the lecturers were needed to present the best understanding on the advantages and disadvantages of the nursing courses. Means of total choices of the respondents (as indicator of central tendency) and standard deviations of their options (as indicator of dispersion) about all of the nursing courses are indicated by Figure 7-2.

Figure 7-2: Nursing courses in total from the lecturers' viewpoint (n=71)



7•22 Percentage scores

In order to compare the perception of the lecturers about the different components of nursing courses of the curriculum, the gained scores were promoted to percentages that are illustrated and described in Table 7-2.

Table 7-2: Percentage scores given by the lecturers to the different components of the nursing courses of the curriculum

	Goal	Content	Methodology	Evaluation
Health	54.7	53.5	52.0	52.0
Management	57.9	52.0	47.3	50.0
*Med-Surg.	50.8	55.2	45.4	46.6
M.C.H.	53.1	53.3	44.4	81.7
Paediatric	57.0	52.5	48.5	55.5
Psychiatric	61.2	56.2	52.8	59.1
NursCourses	54.8	54.0	47.8	54.9
Mean	55.8	53.8	48.4	57.5
s.d.	3.7	1.6	3.4	12.6

(*Med-Surg.= Medical-Surgical, M.C.H.= Mother and Child Health Nursing, s.d.= Standard Deviation)

Among the components of the curriculum, the highest score was for "evaluation" (54.9%) and the lowest score was for "methodology" (47.8%). Among the nursing courses, the highest scores were for the "evaluation" component of the "Mother and Child Health" (M.C.H.) Nursing particularly (81.7%). Another highest score was "goal" of the "Psychiatric" Nursing (61.2%). Meanwhile, the lowest score was for "methodology" of the "Mother and Child Health Nursing".

Table 7-2 shows that the evaluation component of the nursing courses gained the highest mean percent rating (57.5%). It means that although the respondents regarded the evaluation component of the nursing curriculum as the best part of it, there was a high discrepancy among the respondents (s.d. = 12.6%).

To indicate whether there are any significant differences between the evaluation scores, the mean of each component of the curriculum should be compared. This measurement which is called *t*-test is possible only when, according to the assumption of this test, the variances of those groups be equal in the population. The variances of the populations are not possible to be determined without doing the F-test. Hence, before doing any *t*-test, it is necessary to do F-test to determine the situation of the variances in the population. By the F-test, the variances of the samples are compared. If the obtained F-test is less than the critical level of F-value at 5% probability (for details of *p* value confer to the introduction of Part Five), the differences between the variance of each component of the curriculum are not statistically significant in the population ($p > .05$) and therefore, the means are comparable. In other words, the *t*-test is applicable.

As Table 7-3 indicates, all values of F-test were less than the critical value of F at 5% probability (7.15) which means that the *t*-test

was applicable.

Table 7-3: F values of percentage scores given by the lecturers to the different components of the nursing courses of the curriculum

	Goal	Content	Methodology	Evaluation
Goal	-			
Content	0.0	-		
Methodology	3.6	0.5	-	
Evaluation	0.0	0.0	0.4	-

(Critical value of F at 5% probablity is **7.15**, *p* value is **.05**)

Since the obtained *t* -value (2.57) fell within the critical level at 5% probablity (except Goal-Methodology and Content-Methodology), the mean scores of the components of the curriculum were regarded in the same way (*df* = 5). In other words, the lecturers regarded the Goal-Methodology and Content-Methodology components of the nursing curriculum differently in the population (*p* < .05).

In order to determine any relationship among the components of the curriculum, Pearson's Product-moment was measured. None of the correlation coefficients as Table 7-4 indicates were statistically significant (at 5% probablity).

Table 7-4: Correlation coefficient of scores given by the lecturers to the different components of nursing courses of the curriculum

	Goal	Content	Methodology	Evaluation
Goal	-			
Content	0.1	-		
Methodology	0.7	0.3	-	
Evaluation	0.1	0.0	0.3	-

(Critical value of Z at 5% probablity is **1.96**, *p* value is **.05**)

To test the above results in the population, since the obtained values of Z-test were less than the critical level of Z value at 5% probability (1.96), none of the components of the nursing courses of the curriculum from the lecturers' point of view were significantly correlated in the population ($p < .05$).

To compare the lecturers' viewpoint about different nursing courses of the curriculum, the mean and standard deviation of their responses to these courses are indicated by Table 7-5.

Table 7-5 Mean and standard deviation of given scores to the different nursing courses of the curriculum by the lecturers

Nursing Courses	Mean	Standard deviation
Management	51.8	4.5
Health	53.1	1.3
Mother&Child Health	58.1	16.2
Medical-Surgical	49.5	4.4
Paediatric	53.4	3.7
Psychiatric	57.3	3.7
Nursing in total	52.9	3.4

While the Mother and Child Health nursing course gained the highest mean score from the lecturers' viewpoint (58.1%), there was the lowest level of agreement between the respondents (s.d. = 16.2%) on this course. In other words, the scattering of the lecturers' opinions were high and they chose different options of the items of the questionnaire about the Mother and Child Health nursing course. The respondents, their numbers in each educational group and also the subjects which were evaluated by them varied. Therefore, the means were not

matchable statistically and the application of the *t*-Test, F-test, and also correlation coefficient was not possible.

7•3 Evaluation of different components of the curriculum by characteristics of the lecturers

As it was mentioned in the introduction, one of the objectives in this study was determination of any relationship between the evaluation scores given by the respondents to the components of the curriculum according to their characteristics. The gender was the first characteristic of the lecturers which its association with their responses was assessed.

Table 7-6: Scores given by the lecturers to the different components of the nursing courses according to their gender

Curriculum Component	Female	Male
Goal	1423	92
Content	1407	126
Methodology	1270	87
Evaluation	1464	136
Total	5564	441
Mean score of respondents	84.3	88.2
Mean score of components	1391.0	110.2
Standard Deviation of comp.	84.2	24.4

The male lecturers apparently had a slightly higher average score (88.2%) than the female lecturers (84.3%) however, it was not clear whether the result is the same in the population or not. The appropriate test for these scores, that are related to a two-series **nominal** data, is the Kolmogorov-Smirnov Test. The Kolmogorov-Smirnov Test is a test of whether two independent samples have been drawn from the same population. The largest discrepancy between the two series data is $KS =$

0.75. A value of $K_D = 0.75$ is significant at the $\alpha = 0.05$ level for a two-tailed test. Inasmuch as the probability associated with the occurrence of a value as large as the observed value of K_D under, H_0 is at or almost equal to the previously set level of significance, the decision is to reject H_0 . Therefore, it could be concluded that, the two variables (evaluation scores of the nursing curriculum by the lecturers and the gender of the respondents) were not identical and their expected values were believed to be different. It means that there is a relationship between the gender of the lecturers and evaluation scores given by them to the different components of the nursing curriculum ($p < .05$).

To determine the strength of the relationship upon the two variables of gender and the way by which the curriculum was evaluated, contingency coefficient was measured by Tschouproff contingency coefficient. In this case, ρ_T was 0.01, it means that the association between gender of the lecturers and their opinions on different components of the nursing courses of the curriculum was very slight in the population but not statistically significant ($p < .05$).

The second characteristic of the respondents was the lecturers' age. Table 7-7 indicates responses to the different components of the nursing courses of the curriculum by lecturers' age group. It was mentioned there were some missing values that are excluded from the measurements. The columns of the age groups under 30 and over 50 are indicated by "-30" and "50+".

Table 7-7: Scores given by the lecturers to the different components of the nursing courses according to their age groups

Curr. Components	-30	30-39	40-49	50+	Miss.val.
Goal	142	483	661	194	76
Content	88	571	679	167	28

Methodology	52	523	457	259	66
Evaluation	167	617	488	200	87
Total	449	2194	2285	820	257
Mean	112.2	548.5	571.2	205	64.2
Standard Deviation	52.0	58.1	115.0	38.8	25.6

The highest mean and also standard deviation were for the largest age group (40-49) of the respondents which were approximately one-third of them. In contrast to this age groups which had high discrepancy, the lowest mean and standard deviation were concerned with the smallest group (Missing values). In fact, they had agreement on evaluation of the curriculum and also on the missing the answer to the age item of the questionnaire.

In this chapter it was mentioned that the means of the two populations could be comparable when the variances of the two populations are equal (according to the assumption of the t-Test). The variances of the two samples are available but, the variances of the two populations are not. Therefore, the situation of the variances of the two samples were compared by the F-Test.

Table 7-8: F values of scores given by the lecturers to the different components of the nursing courses according to their age groups

	-30	30-39	40-49	50+
-30	-			
30-39	0.0	-		
40-49	0.0	0.2	-	
50+	0.6	0.2	3.8	-

(Critical value of F at 5% probability is 15.44, p value is .05)

Since all the observed values of F-test of the lecturers' age groups were less than the critical level of F value at 5% probability, variances of

the options of the lecturers by age were not different in the population. Therefore, the means were comparable with each other.

The *t*-Test was applied to find out whether the four components of the nursing courses of the curriculum were regarded differently by the lecturers consequence of their varied age groups. Most of the obtained *t* values were greater than the critical level of *t* value at 5% probablity (3.182), it means that (except the age groups -30/50+, -30/Missing, 30-39/40-49) mean scores of the lecturers' responses about the different parts of the nursing courses of the curriculum were statistically significant in the population (**) and the components were regarded differently by the lecturers consequence of their varied age groups.

To discover whether there was any relationship between each age group of the lecturers and their decisions about the different components of nursing courses of the curriculum, Pearson's correlation coefficient was applied.

Table 7-9: Correlation coefficient of responses to the different components of nursing courses by lecturers' age groups

	-30	30-39	40-49	50+
-30	-			
30-39	0.3	-		
40-49	0.1	0.3	-	
50+	0.5	0.3	0.8	-

(Critical value of Z at 5% probablity is 1.96, *p* value is .05)

As indicated in Table 7-9, none of the correlation coefficients were statistically significant. Overall, the high correlations were related to the close age groups which means the small age interval could apparently be a reason for the association (for instance, correlation coefficient of age groups 40-49/50+ was 0.81). All the obtained values

of Z-test were less than the critical level of Z at 5% probablity (1.96), it means that none viewpoint of the age groups were statistically correlated in the population ($p < .05$).

The other characteristic of the lecturers was their last educational degree. The following table is about percentage scores given to the different components of the nursing curriculum by the respondents according to their last degrees.

Table 7-10: Scores given by the lecturers to the different components of the nursing courses of the curriculum according to their last educational degree

Curriculum Scores	*Ph.D. St.	M.Sc.	M.Sc. St.	B.Sc.
Goal	116	1206	99	135
Content	203	1009	144	177
Methodology	161	928	131	137
Evaluation	68	1215	161	148
Total	548	4358	535	597
Average of scores	106.6	83.9	89.16	74.6
Mean of components	137	1089.5	133.7	149.2
Standard deviation	58.1	143.6	26.2	19.4

(*Ph.D. St. = Ph.D. student, M.Sc. = Master degree, M.Sc. St. = Master degree student, B.Sc. = Baccalaureate degree)

The Kruskal-Wallis Test (appropriate for more than two series **nominal** data) applied to analyse the variances. The observed value of $H = 7.11$ was greater than the critical level of H value at 5% probablity (5.99), i.e. the difference among the mean of educational degree groups of the lecturers was statistically meaningful ($p < .05$). Therefore, it

could be concluded that, at least one of the degree groups had more score on nursing courses of the curriculum. Strength of the relationship between the two variables in this case was $p_T = 0.09$, it means that the association between educational degree of the lecturers and their opinions on different parts of the nursing courses of the curriculum was not statistically significant in the population.

The nursing courses of the curriculum are taught by lecturers of six educational groups. Table 7-11 is about the scores given by the respondents to the components of the curriculum according to their majors.

Table 7-11: Scores given by the lecturers to the different components of the nursing courses according to their educational majors

Curr. Scores	*Man.	Health	M.C.H.	M.S.	Paed.	Psych.
Goal	214	190	140	512	280	219
Content	254	206	258	420	233	162
Methodology	218	95	156	430	235	223
Evaluation	246	254	190	588	113	168
Total	932	745	744	1950	861	772
Majors'average	84.7	74.5	82.7	84.7	86.1	96.5
Means Compon.	233	186.2	186	487.5	215.2	193
s.d.	20.0	66.6	52.3	78.6	71.5	32.5

(*Man. = Management, M.C.H. = Mother and Child Health nursing, M.S. = Medical-Surgical nursing, Paed = Paediatric nursing, Psych = Psychiatric nursing)

According to the above table, the highest score was on Medical-Surgical nursing major and the lowest was for Mother and Child Health nursing. The above data are **nominal**, since the observed value of $H = 14.727$ was greater than the critical value of H at 5% probability (11.07), at least one of the educational majors had more score on evaluation of

the nursing courses of the curriculum in the population ($p < .05$).

Strength of the relationship between the two variables in this case was $\rho_T = 0.098$ that means, the association between the different groups of educational major of the lecturers and their opinions on different parts of the nursing courses of the curriculum was not statistically significant ($p < .05$).

Usually the lecturers are chosen among the candidates who have graduated some years ago and have nursing experience for mentorship at time of recruitment. Table 7-12 indicates percentage scores given to the components of the curriculum by the lecturers according to their B.Sc. degree experience.

Table 7-12: Scores given by the lecturers to the different components of the nursing courses according to their length of time since B.Sc. degree

Curr. Components	5-9	10-14	15-19	20-24	25 +
Goal	203	214	440	675	24
Content	137	250	428	569	149
Method	46	163	399	597	152
Evaluation	180	194	546	471	168
Total	566	821	1813	2312	493
Mean of years	47.17	58.64	106.65	115.60	61.62
Mean of compon.	141.5	205.2	453.2	578.8	123.2
Standard deviation	69.3	36.5	64.2	84.3	66.7

As it can be observed none of the lecturers graduated under 5 years since B.Sc. degree. The highest average score was for the group with 20-24 years B.Sc. degree that were the largest group. The lowest score was for the group with 25 years and more experience. The first applied test was the comparison of variances or F test. The results are indicated by Table 7-13.

Table 7-13: F values of scores given by the lecturers to the different components of the nursing courses according to their length of time since B.Sc. degree

	5-9	10-14	15-19	20-24	25 +
5-9	-				
10-14	0.7				
15-19	1.1	1.0	-		
20-24	1.0	0.0	2.4	-	
25 +	0.7	0.1	0.1	4.7	-

(Critical value of F at 5% probablity is **15.44**, *p* value is **.05**)

The obtained values of F-test of B.Sc. degree experience of the lecturers were less than the critical level of F at 5% probablity, i.e. the differences between the variances of the years of experience of each group of the lecturers on B.Sc. were not statistically significant in the population. Therefore, the means could be compared.

Most of the obtained *t* values fell within the critical level of *t* value at 5% probablity (2.447). It means that except the groups 5-9/15-19 and 5-9/20-24, the differences between the other scores of the lecturers' viewpoint on their B.Sc. degree experience on the different components of the nursing courses of the curriculum were statistically significant (***) and in general the lecturers evaluated curriculum like each other.

To discover whether there was any relationship between each component of the curriculum from the lecturers' point of view on their length of time since B.Sc. degree, the results of the application of the correlation coefficient is indicated by Table 7-14.

Table 7-14: Correlation coefficient of scores given by the lecturers to the different components of the nursing courses according to their length of time since B.Sc. degree

5-9	10-14	15-19	20-24	25 +
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5-9	-				
10-14	0.5				
15-19	0.6	0.0	-		
20-24	0.0	0.1	0.7	-	
25 +	0.5	0.2	0.2	0.8	-

(Critical value of Z at 5% probablity is 1.96, *p* value is .05)

Except one correlation coefficient, the other correlation coefficients were not statistically significant in the sample. The highest correlation coefficients were related to the groups 20-24/15-19 and 20-24/25+. It could be interpreted that these groups of the lecturers with B.Sc. experience had more similarity in their opinions on the different components of the nursing curriculum. As all of the obtained values of Z-test were less than the critical level of Z value at 5% probablity (1.96), each pair of the B.Sc. degree experience of the lecturers had not statistically significant correlation in the population.

The other characteristic of the lecturers was the length of time since M.Sc. degree. In recent years, expansion of post-graduate courses in nursing in Iran caused an increasing number of the lecturers who have M.Sc. degree. Any relationship of the length of time since M.Sc. degree and scores given by the lecturers was assessed as following:

Table 7-15: Scores given by the lecturers to the different components of the nursing courses according to their length of time since M.Sc. degree

Curriculum Scores	0-4	5-9	10-14	15 +
Goal	618	792	110	36
Content	796	484	197	56
Methodology	657	523	135	42
Evaluation	699	587	202	71

Total	2770	2386	644	205
Average of years	74.9	91.8	107.3	102.5
Mean of components	692.5	596.5	161	51.2
Standard deviation	76.5	137.1	45.7	15.6

The least average score (74.9%) was for the group graduated under 5 years since M.Sc. degree and the highest score (107.3%) was given to the curriculum by the group 10-14 years M.Sc. degree experience. It can be observed that alongside the increasing in the experience of M.Sc. degree of the respondents, the given scores to the different components of nursing courses of the curriculum have increased in the sample. The situation of the variances of these scores in the population are compared by the F-Test as Table 7-16 indicates.

Table 7-16: F values of scores given by the lecturers to the different components of the nursing courses according to their length of time since M.Sc. degree

	0-4	5-9	10-14	15+
0-4	-			
5-9	2.6			
10-14	4.5	1.6	-	
15+	1.0	0.6	14.0	-

(Critical value of F at 5% probability is **15.44**, *p* value is **.05**)

Since the obtained value of F-test of the length of time since M.Sc. degree of the lecturers were less than the critical level of F value at 5% probability (15.44), the differences between the variances of each group of M.Sc. degree experience of the lecturers were not statistically significant in the population hence, the means could be compared.

The *t*-Test indicated that except *t* value of one item (0-4/5-9) that was less than the critical level of *t* value at 5% probability (2.447), the other mean scores of the lecturers' M.Sc. degree experience on different

components of the nursing courses of the curriculum were statistically significant in the population (***). Thus, the ideas of the lecturers about the curriculum were differently.

To discover was there any relationship between each component of the curriculum from the lecturers' point of view, Pearson's Product-moment was used that the results are indicated by Table 7-17.

Table 7-17: Correlation coefficient of scores given by the lecturers to the different components of the nursing courses according to their length of time since M.Sc. degree

	0-4	5-9	10-14	15+
0-4	-			
5-9	0.7			
10-14	0.8	0.7	-	
15+	0.6	0.5	0.9	-

(Critical value of Z at 5% probability is 1.96, *p* value is .05)

Except one correlation coefficient of the above table, the others were not statistically significant in the sample. The highest correlations were related to the groups which their interval were close. Apparently, such respondents had much more common viewpoints on the nursing courses of the curriculum in the sample. These results should be tested in the population. The obtained values of Z-test were less than the critical level of Z value at 5% probablity (1.96), that means each pair of length of time since M.Sc. degree of the lecturers had not statistically

significant correlation in the population.

Usually the nurses are chosen for teaching and training the students among the nurses who have some clinical experience. This characteristic could have a relationship with the opinion of the lecturers. In the following Table 7-18 indicates the scores given to the components of the curriculum according to the respondents' clinical experience.

Table 7-18: Scores given by the lecturers to the different components of the nursing courses according to their clinical experience in years

Curr. Components	0-4	5-9	10-14	15 +
Goal	683	502	317	54
Content	504	655	295	78
Methodology	525	456	362	14
Evaluation	457	571	432	99
Total	2169	2184	1407	245
Average of scores	60.2	128.5	93.8	81.7
Mean of components	452.2	546.9	351.7	61.2
Standard deviation	98.0	86.7	60.2	36.5

The highest average score (128.5%) was for group 5-9 years clinical experienced and the lowest was concerned to group -5 years experienced. These scores are related to the sample therefore, in order to test the results in the population the situation of the variances of the two samples were compared and demonstrated by Table 7-19.

Table 7-19: F values of scores given by the lecturers to the different components of the nursing courses according to their clinical experience in years

	0-4	5-9	10-14	15+
0-4	-			
5-9	0.4	-		
10-14	0.9	0.1	-	
15+	0.3	3.0	0.2	-

(Critical value of F at 5% probablity is **15.44**, *p* value is **.05**)

Since the observed value of F-test of clinical experience of the lecturers was less than the critical level of F value at 5% probablity (15.44), the differences between the variances of each clinical experience group of the lecturers were not statistically significant in the population. Therefore, the means were comparable.

The t-Test indicated that the obtained *t* values fell greater than the critical level of *t* value at 5% probablity (2.447). Therefore, except clinical experience groups 0-4/5-9, the other differences among the different mean scores of the lecturers' point of view on the different parts of the nursing courses were statistically meaningful in the population (**) and the lecturers, consequence of their clinical experience regarded the nursing courses differently.

The Pearson's Product-moment was applied to discover whether there was any association between each component of the curriculum from the lecturers' point of view on their clinical experience. The results is indicated by Table 7-20.

Table 7-20: Correlation coefficient of scores given by the lecturers to the different components of the nursing courses according to their clinical experience in years

	0-4	5-9	10-14	15+
0-4	-			

5-9	0.4	-		
10-14	0.5	0.2	-	
15+	0.4	0.8	0.3	-

(Critical value of Z at 5% probablity is **1.96**, *p* value is **.05**)

None of the correlation coefficients were significant in the sample and except one of them, the level of the others were very low. Were these results valid in the population or not? Since the obtained values of Z-test were less than the critical level of Z value at 5% probablity (1.96), each two groups of clinical experience of the lecturers had not statistically significant correlation in the population.

One of the important factors on performance of the curriculum which was asked in the questionnaire could be the teaching experience of the lecturers. Table 7-21 indicates the scores given by the respondents to the components of the curriculum according to their teaching experience.

Table 7-21: Scores given by the lecturers to the different components of the nursing courses according to their teaching experience in years

Curr.Component	0-4	5-9	10-14	15-19	20-24	25+
Goal	196	485	332	304	155	84
Content	205	523	316	259	142	88
Methodology	166	441	280	276	119	75
Evaluation	212	539	397	163	143	105
Total	779	1988	1325	1002	559	352
Scores Average	70.8	99.4	82.8	71.6	79.9	117.3
Mean Compon.	194.7	497	331.2	250.5	139.7	88
s.d.	20.2	43.7	48.9	61.2	15.6	12.6

The highest average score (117.3%) was concerned with group over 25 years teaching experience and the lowest (70.8%) was for the group with under 5 years teaching experience in the sample. The

situation of the variances of the two samples in the population were compared. The results are demonstrating by the following table.

Table 7-22: F values of scores given by the lecturers to the different components of the nursing courses according to their teaching experience in years

	0-4	5-9	10-14	15-19	20-24	25+
0-4	-					
5-9	37.9	-				
10-14	4.2	4.0	-			
15-19	0.9	1.8	3.4	-		
20-24	2.7	1.1	0.9	0.0	-	
25+	6.0	9.0	27.3	6.9	0.5	-

(Critical value of F at 5% probablity is **15.44**, *p* value is **.05**)

The obtained values of F-test of teaching experience groups of the lecturers were less than the critical level of F value at 5% probablity, except two exceeded items. It means that the differences among the variances of each teaching experience group of the lecturers were not statistically significant in the population, and the means were comparable.

The results of *t*-Test of the mean scores of the lecturers given to the curriculum on their teaching experience indicated that the obtained *t* values fell more than the critical level of *t* value at 5% probablity (2.447), except two exceeded items (0-4/15-19, 10-14/15+). A majority of differences among the mean scores of the lecturers' point of view on their teaching experience on the different parts of the nursing courses of the curriculum were statistically meaningful (**) and the respondents consequence of their teaching experience regarded the nursing courses of the curriculum differently.

To discover whether there was any relationship between scores given by the respondents to the components of the curriculum according

to their teaching experience, correlation coefficient was used. The following table demonstrates the results of Pearson's Product-moment.

Table 7-23: Correlation coefficient of scores given by the lecturers to the different components of the nursing courses according to their teaching experience in years

	0-4	5-9	10-14	15-19	20-24	25+
0-4	-					
5-9	1.0	-				
10-14	0.8	0.8	-			
15-19	0.6	0.7	0.8	-		
20-24	0.8	0.6	0.6	0.0	-	
25+	0.9	0.9	1.0	0.9	0.5	-

(Critical value of Z at 5% robablity is **1.96**, *p* value is **.05**)

As it can be seen in the above table, many of the correlation coefficients were statistically significant. The highest correlations were related to the close interval teaching experience groups in the sample. To test the above results in the population the Z-test indicated that the obtained values were less than the critical level of Z at 5% probablity (1.96), and only two pairs of excceded items had statistically significant correlation in the population (**).

Since the observed values of F-test of the correlated items were less than critical point (38.51), the Regression of those correlated items were linear (*).

Special responsibility of the lecturers in addition to the teaching and training of nursing students and the experience of them could be an influential factor in evaluation of the curriculum. Table 7-24 demonstrates the scores given to the components of the curriculum by the lecturers according to their educational responsibilities.

Table 7-24: Scores given by the lecturers to the different components of

the nursing courses according to their educational responsibilities

Curr. Components	No Respons.	Head of Dep.	Ed. Deputy
Goal	1003	352	201
Content	524	648	361
Methodology	711	185	461
Evaluation	284	677	598
Total	2522	1861	1622
Average of scores	60.0	97.9	162.2
Mean of components	630.5	465.5	405.2
Standard deviation	303.7	237.8	167.3

The majority of the respondents had not any special educational responsibilities before and the rest of them were head of department or were educational deputy. Regarding the nature of the data, **nominal**, the Kruskal-Wallis test indicated that the observed value of $H = 6.05$ exceeds the critical level of H value at 5% probability (5.99). It means that the differences among the variances of educational responsibilities of the lecturers in evaluating the nursing courses of the curriculum were statistically meaningful ($p < .05$). Strength of this relationship between the two variables in this case was $\rho_T = 0.26$. It means that the association between the educational responsibilities of the lecturers and their opinions about the different parts of the nursing curriculum was not statistically significant ($p < .05$).

Overall: among the characteristics of the lecturers the post-B.Sc. experience, M.Sc. experience and clinical experience of them on their decisions in evaluating the nursing courses of the curriculum had not correlation in the population. None of the correlated variables were statistically significant ($p < .05$) however, the strength of those

correlated items were as follow:

Table 7-25: Strength of correlation coefficients of correlated characteristics of the lecturers and evaluation scores given by them to the different components of nursing courses of the curriculum

Characteristics	Tchuproff contingency coefficient (ρ_T)
Gender	0.01
Educational Degree	0.09
Educational major	0.1
Teaching experience (Linear Regression)	0.17
Educational responsibility	0.26

(*p* value is .05)

7•4 The Results of the Interviews, In the last chapter it was mentioned that in order to gain more information about the nursing courses the interviewes were accomplished with the Head of Nursing Departments in one of the Nursing Faculty in the capital. Therefore, theses data are gathered by the opinions of one interviewee in each educational group (totally six interviews) about the different components of the curriculum. According to the different components of the curriculum (Goal, Content, Methodology, Evaluation) the statements of the interviewees in each professional group about their own field of teaching are cited.

7•41 Goal Component of the Curriculum:

- The interviewee in **Health nursing** group expressed that in comparison with the other courses achievement of its goal needs to a long-term period.

- The Head of **Nursing Management** Department believed that the achievement of the goals of this course depends on the interpersonal skills of lecturers and tutors for planning the students' activities.

- As the interviewee expressed, some of the goals in **Mother & Child Health nursing** course are not usually achievable because, the proposed teaching time is limited.

- Among the nursing courses the **Medical-Surgical nursing** course gained the lowest score from the lecturers' viewpoint. The lecturers of this educational group believed that despite the importance of its subjects for clinical nursing, the goals and specially affective and psycho-motor domains of their objectives are not described precisely.

- The interviewee in **Paediatric nursing** group expressed that generally the goal of practical activities in different childrens' wards is left ambiguous and only the goals of theoretical courses are identified.

- Although the highest score of the goal component was for **Psychiatric nursing** however, according to the Head of Psychiatric Nursing Department, the individual differences of nursing students (particularly their psychological condition, individual interests, etc.) is an obstacle against the achievement of all of the goals in this course. The consideration of affective domain in development of their goals is advantage of this course.

7.42 Content Component of the Curriculum:

The following are the viewpoints of those interviewees about the collection of the courses which are taught by the lecturers in each educational group.

Health Nursing Educational Group- the problems that were expressed by the Head of Health Nursing Department are as follow:

- The biggest deficiency of the content of this course is a lack of preventive aspect (against the diseases) in the Health Nursing curriculum. Therefore, students did not regard it as a course which can help to prevent the diseases. They consider it similar to the other courses as a series of procedure to treat the disorders. Many students may study the health courses because it is compulsory rather than desirable for their future task as the skills that help them to prevent the society against the diseases.

- As a signatory of the Alma Ata declaration, the Government of Iran is obliged to fulfil the aim of Primary Health Care (P.H.C.). In 1977 the World Health Assembly (the central authority for the World Health Organization) resolved that the main social target of W.H.O. in the coming decades should be attained by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life. The Alma Ata declaration, recognizing primary health care as the key to achieving health for all, was issued in 1978. However, the context of the existing subjects in Health nursing has not been chosen in such a way to fulfil the aim of W.H.O. which is to provide P.H.C. or "health for all by 2000".

- The lack of health centres (especially in urban areas) and defect in the referring and following up system, have prevented interdisciplinary collaboration of the health care system in Iran. In addition, curricula policy should had put its emphasis on health promotion as an important nursing function. Therefore, nursing students cannot realize a relationship between the strategy of P.H.C. and their duties as a nurse. In order to make the P.H.C. strategy understandable and workable by the students, it is necessary to clarify the areas and their competency that should be achieved. Unfortunately,

there have been a little attempt to implement this point in the curriculum so far. For example, one of the most important item of the P.H.C. is to provide clean water for drinking in every places, but the curriculum does not include the useful procedures that the students could learn how it is achieved and nurses role in its mainteance. Hence, nursing students are not given adequate preparation to work in the far villages after completing their study.

Medical-Surgical Nursing Educational Group- The most important viewpoints of the interviewee in this group (the Head of the Medical-Surgical Nursing Department) were as follow:

- One of the largest problems in this group is the gap between theory and practice. Most of the subjects and procedures in Medical-Surgical Nursing group are taught according to the last edition of the textbooks however, those practices may not be performed in wards by the staff.

- In the existing curriculum, "Chronic Diseases" is taught extensively as a separate subject. In addition, the nature of chronic diseases and their nursing care are repeated in all courses. This repetition may become boring to the students. Therefore, it may be more convenient if the general concept of "Chronic Diseases" be included in the course of "Introduction to the Medical-Surgical Nursing", and then, nursing care of each chronic diseases be taught in related course.

- In contrast, "Infectious Diseases" which are very important part of health problems in our country have not been dealt in details. Hence, it seems that it would be better if this subject had a format similar to that of the Chronic Diseases (as a general concept in the Introduction to the Medical-Surgical Nursing and then be described in each course and

each disease completely).

- Another defect of the Medical-Surgical Nursing curriculum is the lack of emphasis on the Medical-Surgical Nursing in the community. Whereas, this course is not only restricted to hospital and the hospitalized patients.

- One of the most important skills that is recently involved in the nurses' tasks, is the administration of physical examination in order to reveal the patient's health problems. Although the students as the future nurses have to have the abilities to assess the health condition of their clients, they have received not any training about the physical examination skills and this subject is not integrated in the syllabus of Medical-Surgical Nursing as a dependent or an independent course.

Mother and Child Health Nursing Educational Group- according to the viewpoints of the interviewee in this group (the Head of Mother and Child Health Nursing Department) some deficiencies in the content of courses in this educational group are as follow:

- Despite the importance of "newborn" and "genetic" subjects, the content of these courses is considered brief and inadequate.

- Moreover, instead of including the very basic and necessary issues such as "pre-natal care" or "side effects of some drugs on fetus during the pregnancy" (especially antibiotics and pain killers) in the course, the emphasis has been on some of the "problematic cases of deliveries"; all kinds of "anaesthesia in delivery"; and "caesarean section" approaches.

Nursing Management Educational Group- from the perception of the Head of Nursing Management Department, the content of this course was approximately comprehensive and had little defects.

- There is some discordance between the content derived from the

English textbooks and the limited facilities in wards in Iran. What is taught in those books is not always applicable in many of the hospitals (like application of computer for nursing care plan in different wards).

- The readiness of the staff nurses (particularly Head nurses) to accept the innovative viewpoints in nursing management is the first step in prosperity of this course. Cooperation of the staff nurses will assist the students to integrate the theory and practice.

Paediatric Nursing Educational Group- The interviewee in this educational group expressed that:

- The medical care and nursing care have common aims, to cure patients, but the function of each discipline are different. The theme of the textbooks in the curriculum of Paediatric nursing is more medical rather than nursing. The focus of nursing cares is on the daily living activities and hence helps the patients to promote their health. Whereas the medical care focuses on fighting against diseases. Therefore, useful nursing procedures and their applications are not adequately emphasized in the existing curriculum.

Psychiatric Nursing Educational Group- the only critical point that was expressed by Head of Psychiatric Nursing Department in interview is:

- The subjects are arranged from simple to complex scrupulously. There is no discernable criticism in the content of Psychiatric Nursing.

7.43 Methodology Component of the Curriculum:

Most of the opinions expressed by the Head of Nursing Department about the critical issues in methodology component of the curriculum were similar in interviews. Therefore, those viewpoints are dealt with together in this chapter and will be discussed in detail in

Chapter Nine. The only common viewpoint of the lecturers and the students was on methodology component of the curriculum. Because, the lowest score of the lecturers' point of view and the lowest score of the students' point of view were on the methodology of the nursing curriculum particularly methodology of the Mother and Child Health Nursing course.

Among the nursing courses, the highest level of approval was for the Psychiatric Nursing. This course is taught in the last terms of study (seventh and eighth terms). In addition, its concept is subjective and does not need the advanced objective devices for demonstration of the notions. As mentioned in Chapter One, the facilities of nursing faculty and also the size of the class have a strong influence on the quality of the methodology of the nursing curriculum. Therefore, considering the current limited facilities of the faculties and huge number of the students, the methodology of Psychiatric Nursing course was more acceptable than the other courses.

7.44 Evaluation Component of the Curriculum:

The most controversial component of the nursing curriculum was the Evaluation. Although the lecturers regarded it as the best part of the curriculum, there were a high level of discrepancy among them. Interviews also showed a similar results.

In general, the lack of an appropriate and standardised instrument for assessment of the students with respect to the individual differences (varied background, knowledge and skills) was the common points that expressed by the interviewees. The head of different educational groups had different opinions on the evaluation component. Some of them, for example, Mother and Child Health Nursing and Medical-Surgical

Nursing, believed that the content of the curriculum is too much loaded and the time is limited. Therefore, they could not assess their students regularly and adequately. Even if they could, the current approaches of evaluation were not focused on the related knowledge of the students.

On the other hand, some of the interviewees (for instance, the Heads of nursing Management and Psychiatric Nursing departments) believed that they can and do effectively assess (especially formative) their students' knowledge. In fact, this opposite view may be related to the arrangement of teaching time of those courses. Some courses like Medical-Surgical and Mother and Child Health Nursing are taught in the first and the second years of the study. In that time, the students have not passed some of the prerequisites courses and are not familiar with many basic concepts of nursing. Therefore, they need much more time to learn principles of diseases and their nursing care. Consequently, the lecturers of those courses are not satisfied with these constraints. However, through time the students get more knowledge and more clinical experience and their learning needs are fulfilled easier and faster than the earlier times.

CHAPTER EIGHT

FINDINGS OF THE RESEARCH: THE STUDENTS

Introduction: As it was mentioned in Chapter Seven the findings of the research are illustrated and described in two chapters. Chapter Seven was concerned with the results of the lecturers' questionnaires and interviews. This chapter, Chapter Eight, describes the findings of the students' questionnaire. The results are organised into three categories: demographic data, measures of central tendency, measures of association. In the following, each of these measurements are described by headings **8.1**, **8.2** and **8.3**. It should be noted that similar to the last chapter, criterion for statistical significance in this chapter is $\alpha = .05$. It means that the level of confidence for acceptance or rejection regions of inferences is at 95% probability or $p < .05$.

8.1 Demographic data

These data are illustrated by figures in Appendix. The following findings emerge from Figures **A10-A12**.

- A vast majority (82%) of the students were 20-24 years old and just 5% of them were over 30 years old (Figure **A10**, p.370).
- Two thirds of the students (68%) were female and less than one third of them (32%) were male. It means that there is an increasing trend among the young males to study nursing in comparison with the male nursing lecturers (7%) who have been graduated some years ago (Figure **A11**, p.371).
- A small number of the students (6%) were working as a licensed

practical nurse (L.P.N.) before commencing their B.Sc. degree studying. They were the nurses who have graduated a two-year nursing course established some years ago and then stopped. The majority of the students (94%) had no prior nursing experience (Figure A12, p.371).

8.2 Evaluation of different components of the Nursing, Life and Social Science courses related to nursing by the students:

At the beginning of the analysis of the data, in order to understand important features of them, **Descriptive Statistics** were applied. Indeed, the purpose of application of these statistics was to answer the first research question in which asked, "What is the grade's level of each component of the curriculum from the students' point of view?".

At the second stage, **Inferential Statistics** were utilised to make an inference about a population based upon the information contained in a sample. The aim was to answer the other research questions that were concerned with:

- values of the respondents' viewpoint on scores of different components of the curriculum,
- association between perceptions,
- strengths of the associations.

Similar to Chapter Seven, the data related to the students are indicated in two levels, raw scores (8.21) and percentage scores (8.22).

8.21 Raw scores

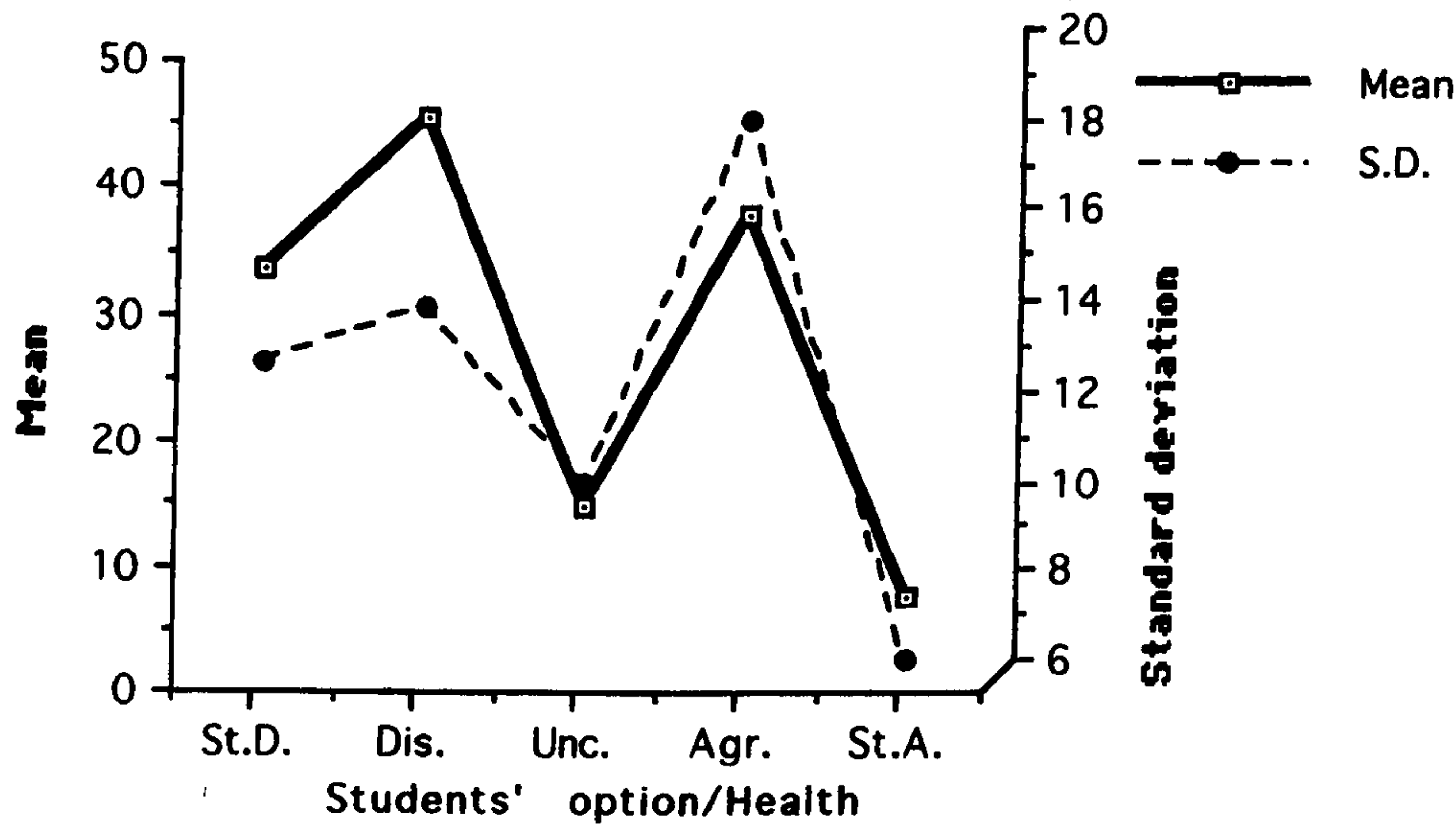
All components (goal, content, methodology, evaluation) of the nursing, life and social science courses relating to nursing were evaluated by the students. According to the **Likert Scale**, the sum of the crude numbers of the choices were multiplied by their indexes, then the scores of each

component were calculated (from zero for strongly disagree to four for strongly agree). The comparison of the respondents' opinion about the different courses of the curriculum as the raw data were not possible. Therefore students' viewpoints on nursing, life and social science courses related to nursing were promoted to the indicators of central tendency (mean) and dispersion (standard deviation). The items of each course of the curriculum (chosen by the students) are demonstrated in Figures 8-1 to 8-7 for nursing courses and Figures 8-8 to 8-24 for the life and social science courses related to nursing.

It should be noted that most of the statements of the questionnaire were positive and had an optimistic view about the curriculum. In addition, the order of the choices in the questionnaire was from left to right: Strongly disagree to Strongly agree. Hence, when there was a trend in choices to the left it means that the perception of the respondents is negative and they have not agreement with those statements. In contrast, a trend to the right means an optimistic view of the respondents in the evaluation of that course.

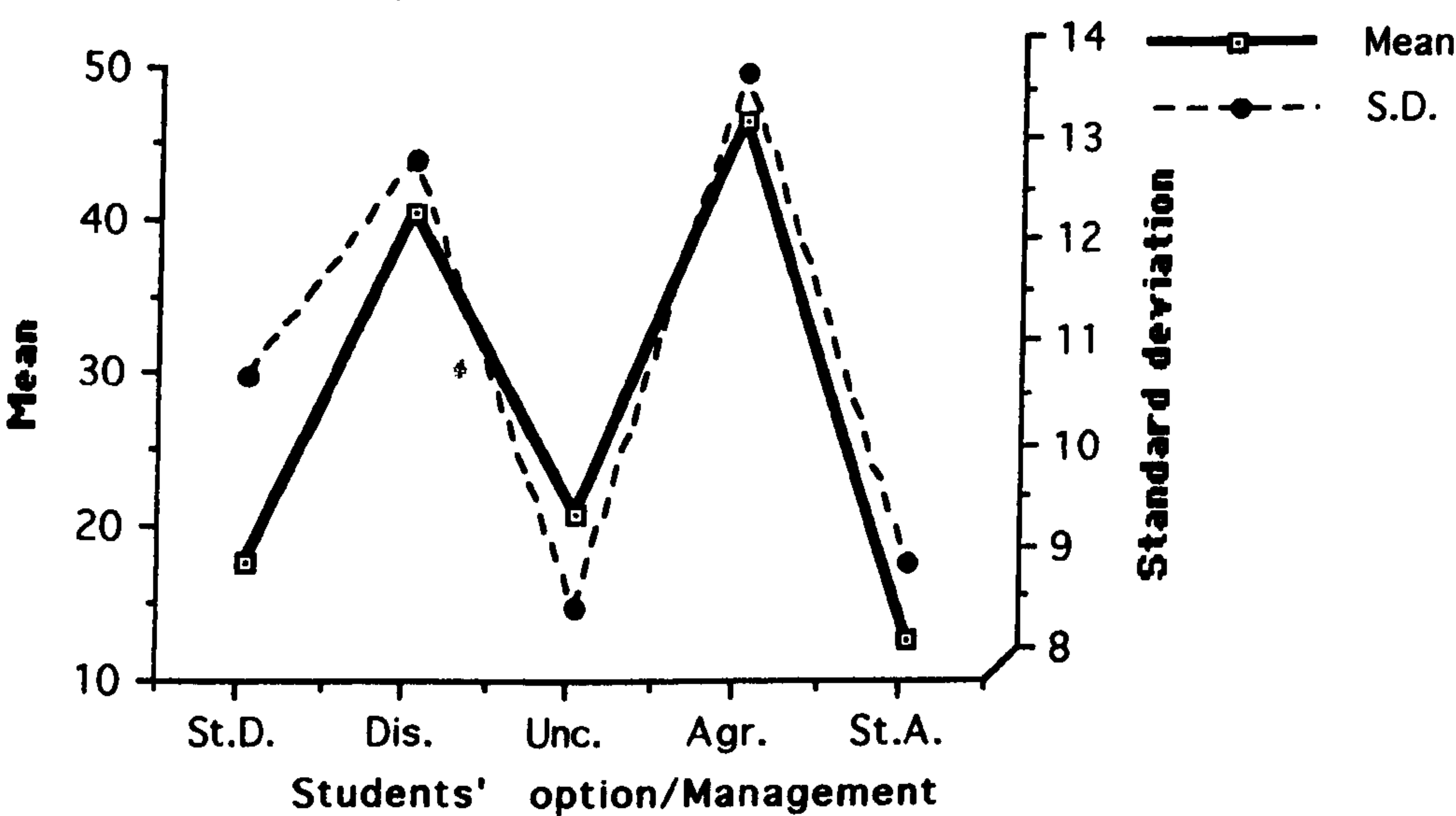
The following figures that are ordered alphabetically indicate the nursing courses of the curriculum from perception of the students. The first field of nursing, Health Nursing, was evaluated by all of the students ($n = 136$) and gained the least average score (39%) among the nursing courses. Most of the choices was the "Disagree" option. Figure 8-1 is related to the students' choices about the items of Health Nursing course of the curriculum.

Figure 8-1: Health nursing course from the students' viewpoint (n=136)



The following figure is concerned with the students' opinion about Nursing Management. As the graph shows, the highest average score (49%) of different components of the nursing was gained by this course. The most frequent responses of the students were the "Agree" and "Disagree" choices. These two options gained a high level of discrepancies among the respondents.

Figure 8-2: Nursing Management course from the students' viewpoint (n=136)



The third nursing course was Medical-Surgical nursing. The result of evaluation of this course is shown by the following figure which indicates that the students selected the "Disagree" choices more than the others. As the graph illustrates, the patterns of mean and standard deviation of the answers are similar.

Figure 8-3: Medical-Surgical nursing course from the students' viewpoint (n=136)

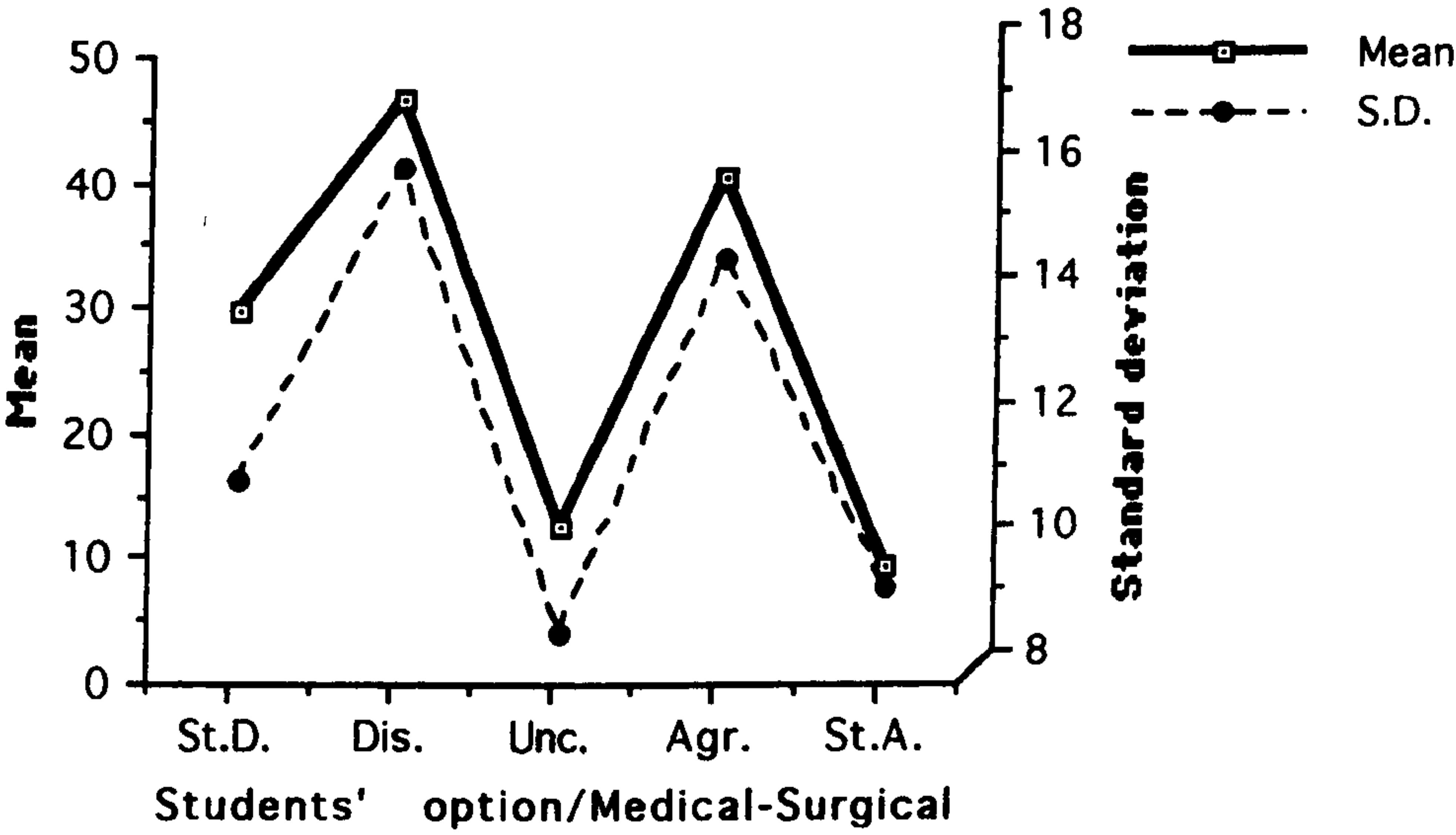
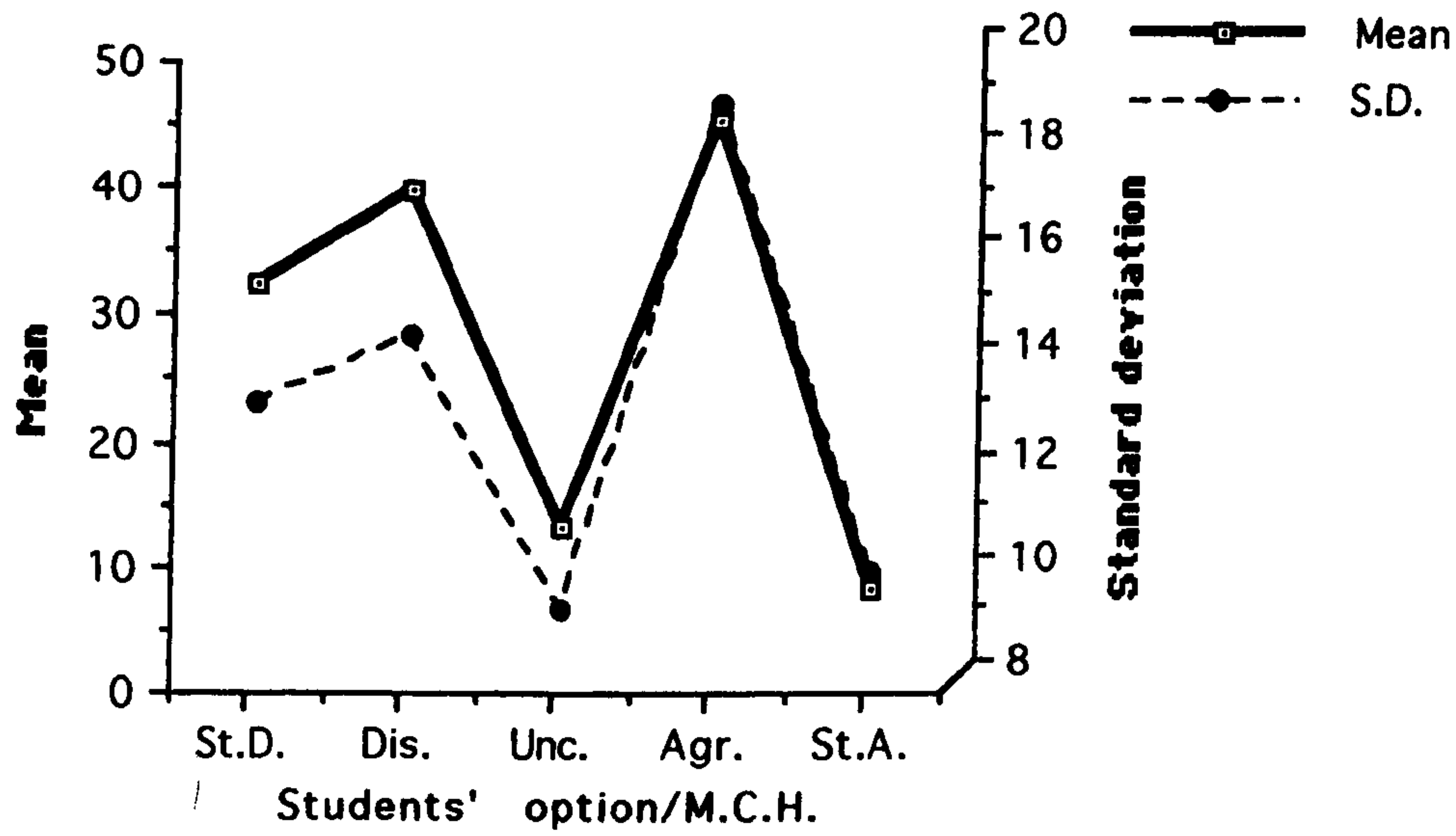


Figure 8-4 indicates that the most frequent responses to the statements relating to Mother and Child Health nursing were the "Agree" choices with the highest discrepancy among the respondents. The least students' opinions were the "Strongly Agree".

Figure 8-4: Mother & Child Health nursing course from the students' viewpoint (n=136)



The Paediatric Nursing was the other nursing course which the students responded to (Figure 8-5). Similar to the Medical-Surgical Nursing, the most frequent responses was the "Disagree" options with the highest discrepancy among the respondents.

Figure 8-5: Paediatric nursing course from the students' viewpoint (n=136)

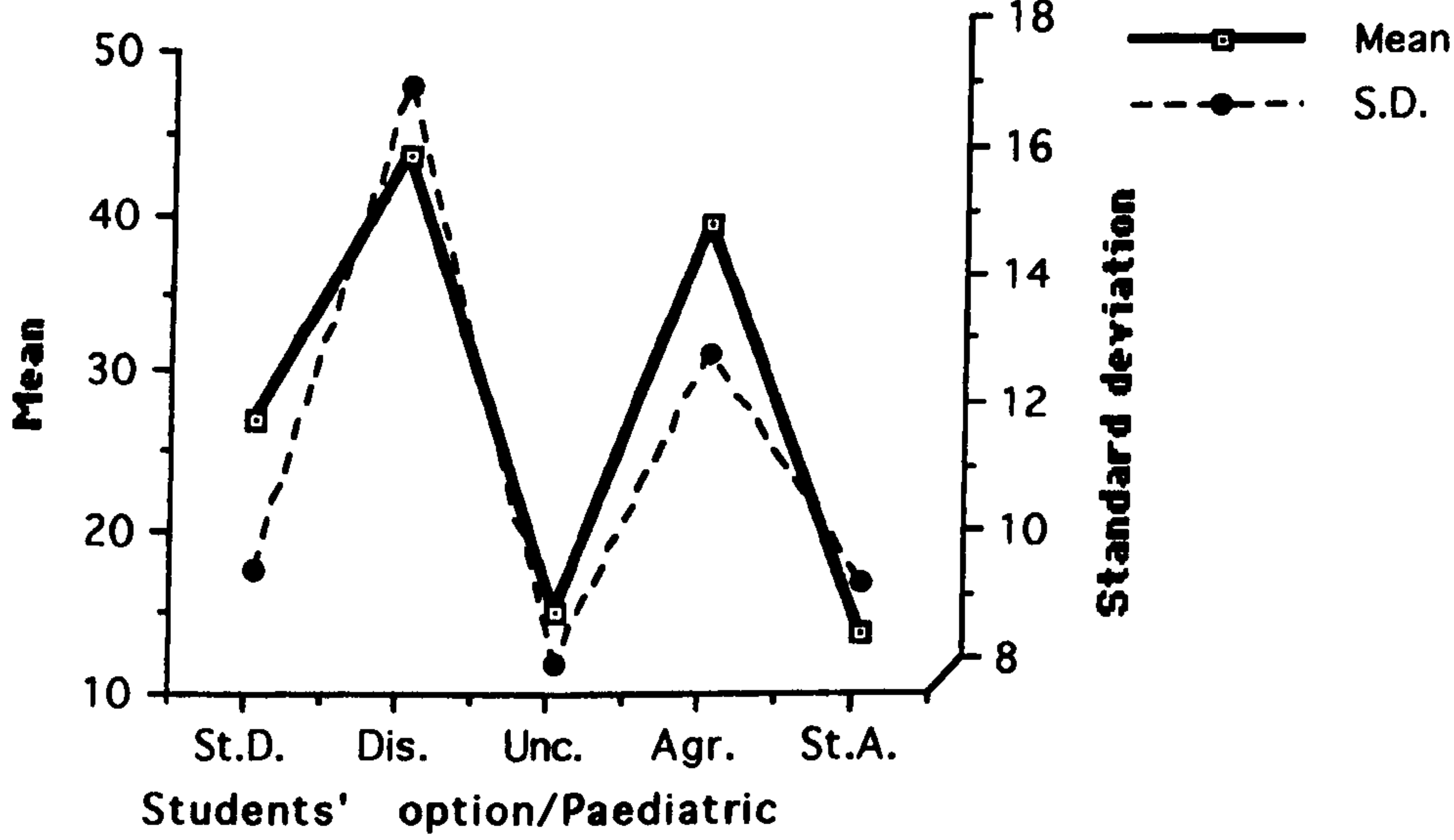


Figure 8-6 is related to the last course of nursing, Psychiatric nursing. Although in comparison with the other options, the standard deviation of

the "Disagree" choices was not low, but these selections were the most options among the others.

Figure 8-6: Psychiatric nursing course from the students' viewpoint (n=136)

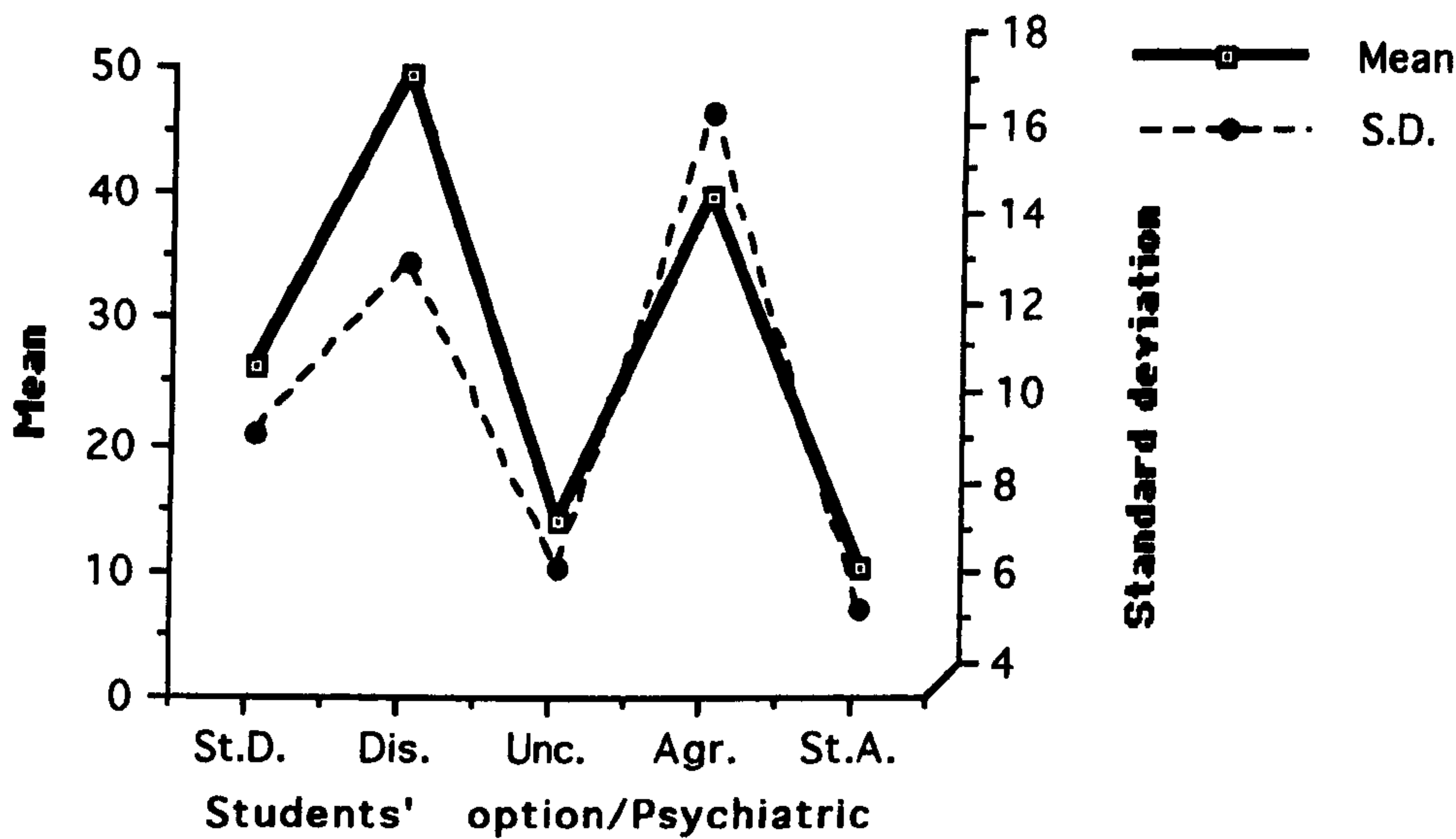
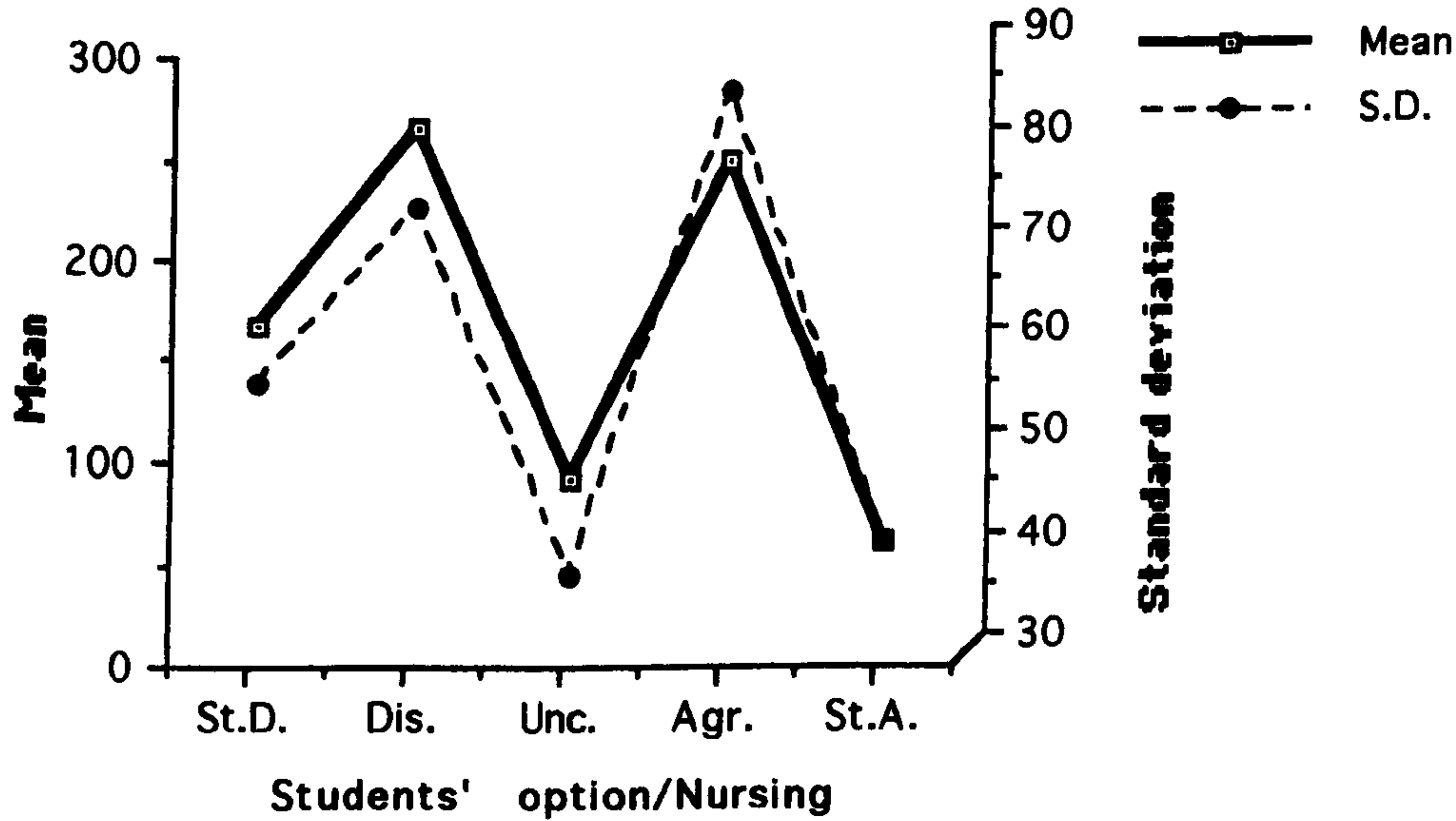


Figure 8-7 indicates the collective evaluation of nursing courses of the curriculum by the students. The most frequent responses were the "Disagree" and then "Strongly disagree" options. This tendency to the left side of the figure (that reveals the negative perception of the respondents) could be interpreted as in general, the students had not an optimistic perceptions on evaluation of the curriculum.

Figure 8-7: Nursing courses in total from the students' viewpoint (n=136)



In the students' questionnaire, the respondents were first requested to evaluate the nursing courses and then the life and social science courses related to nursing. These courses are usually prerequisites and take into account an important part of the nursing curriculum. The results of evaluation of the different courses are illustrated alphabetically.

Figure 8-8 shows the evaluation of the Anatomy course by the students. The most frequent option of the items of the questionnaire was "Disagree". This course is usually taught in the first term of B.Sc. course.

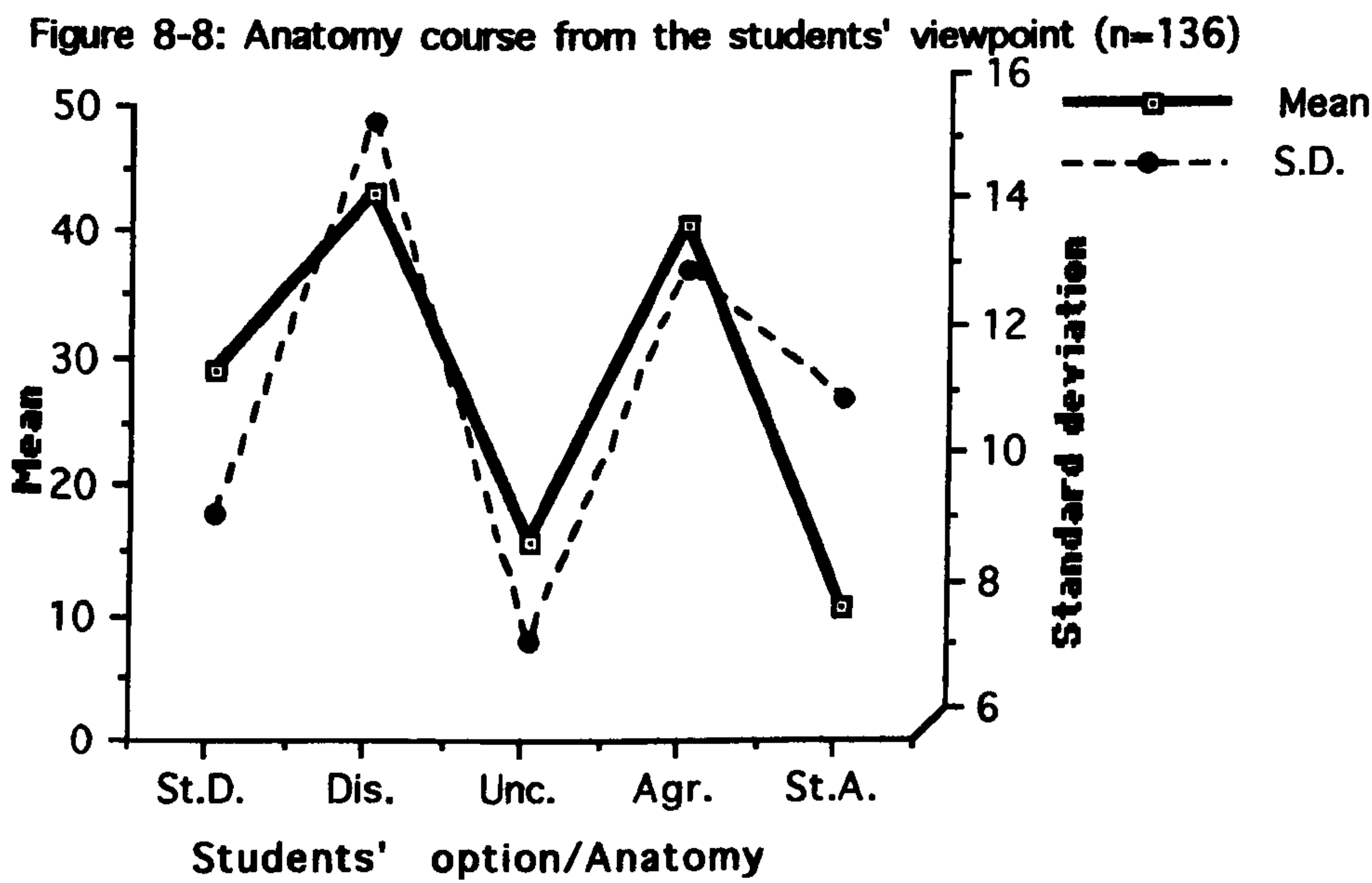
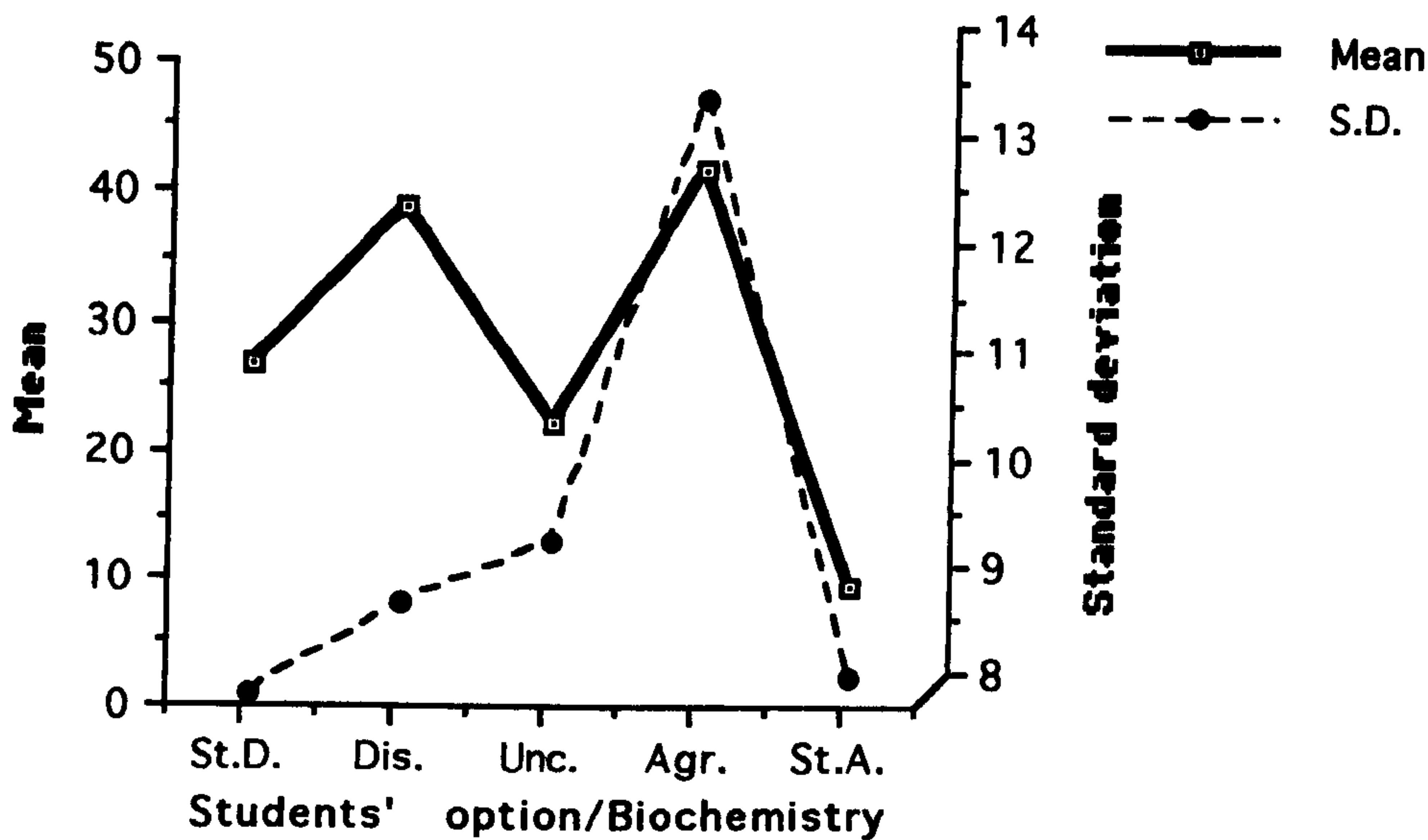


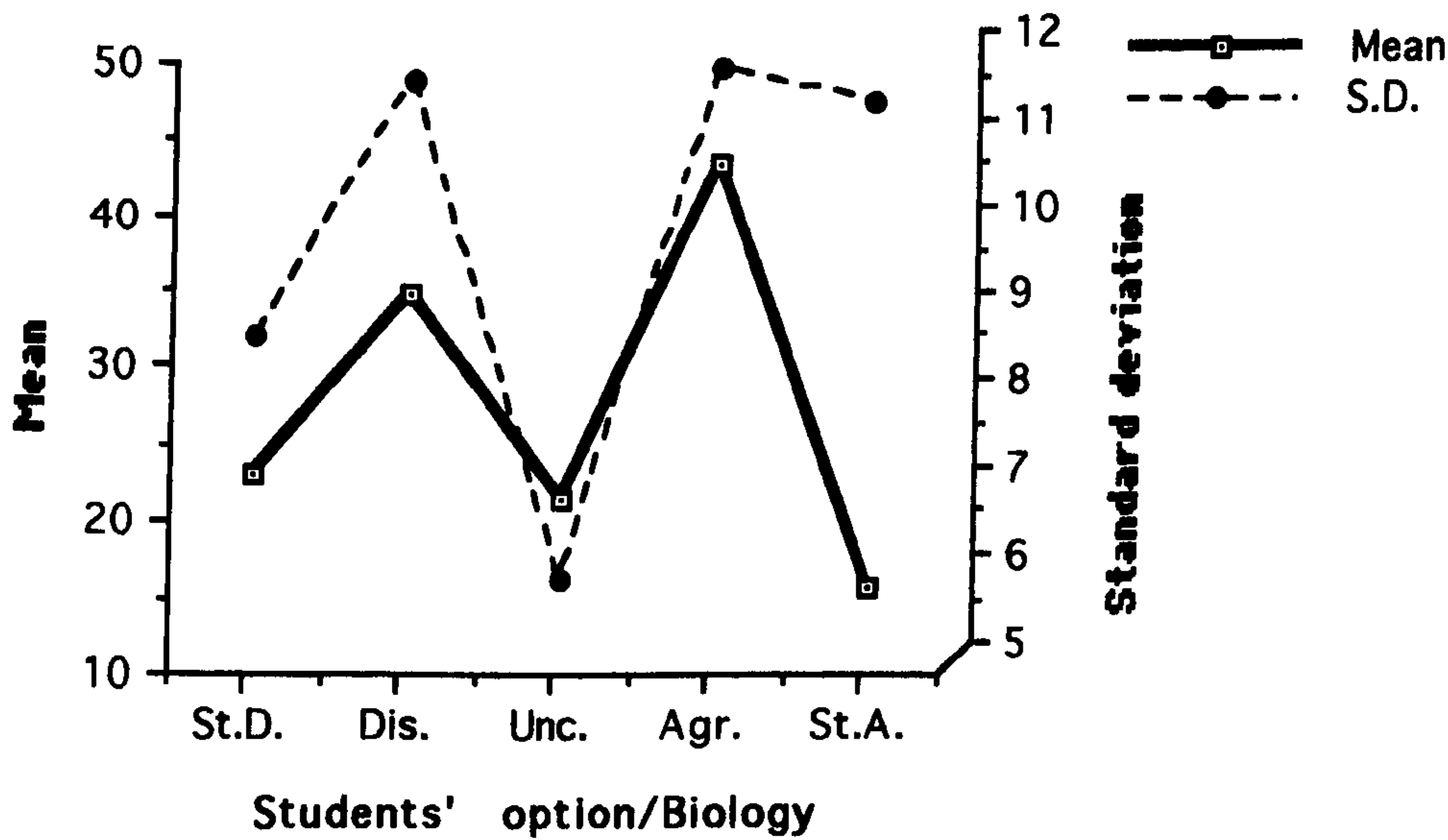
Figure 8-9 indicates the Biochemistry course which is presented in the first term of B.Sc. nursing study. The least discrepancy among the respondents was for the "Strongly disagree". This means that many of the students did not find the components of this course at a desirable level. The most frequent option of the students was the "Agree" option.

Figure 8-9: Biochemistry course from the students' viewpoint



The Biology course is taught in the first term of B.Sc. nursing course. As Figure 8-10 indicates, the selection of most of the respondents was the "Agree" items. Although a small number of the students stated "Strongly agree" with the items of the questionnaire, the highest discrepancy of the students was related to this course.

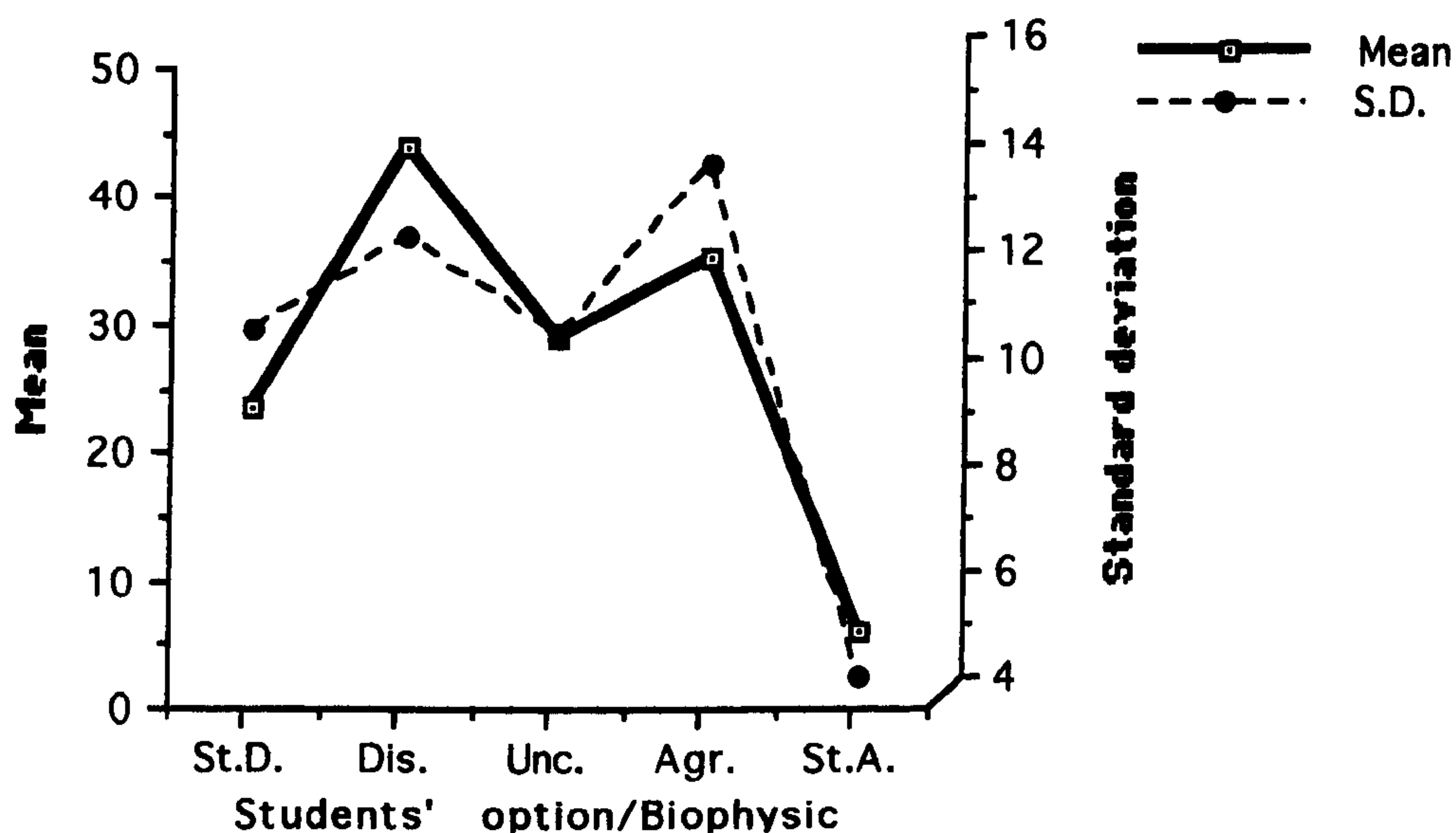
Figure 8-10: Biology course from the students' viewpoint (n=136)



The Biophysics course is a part of the courses which are presented in the

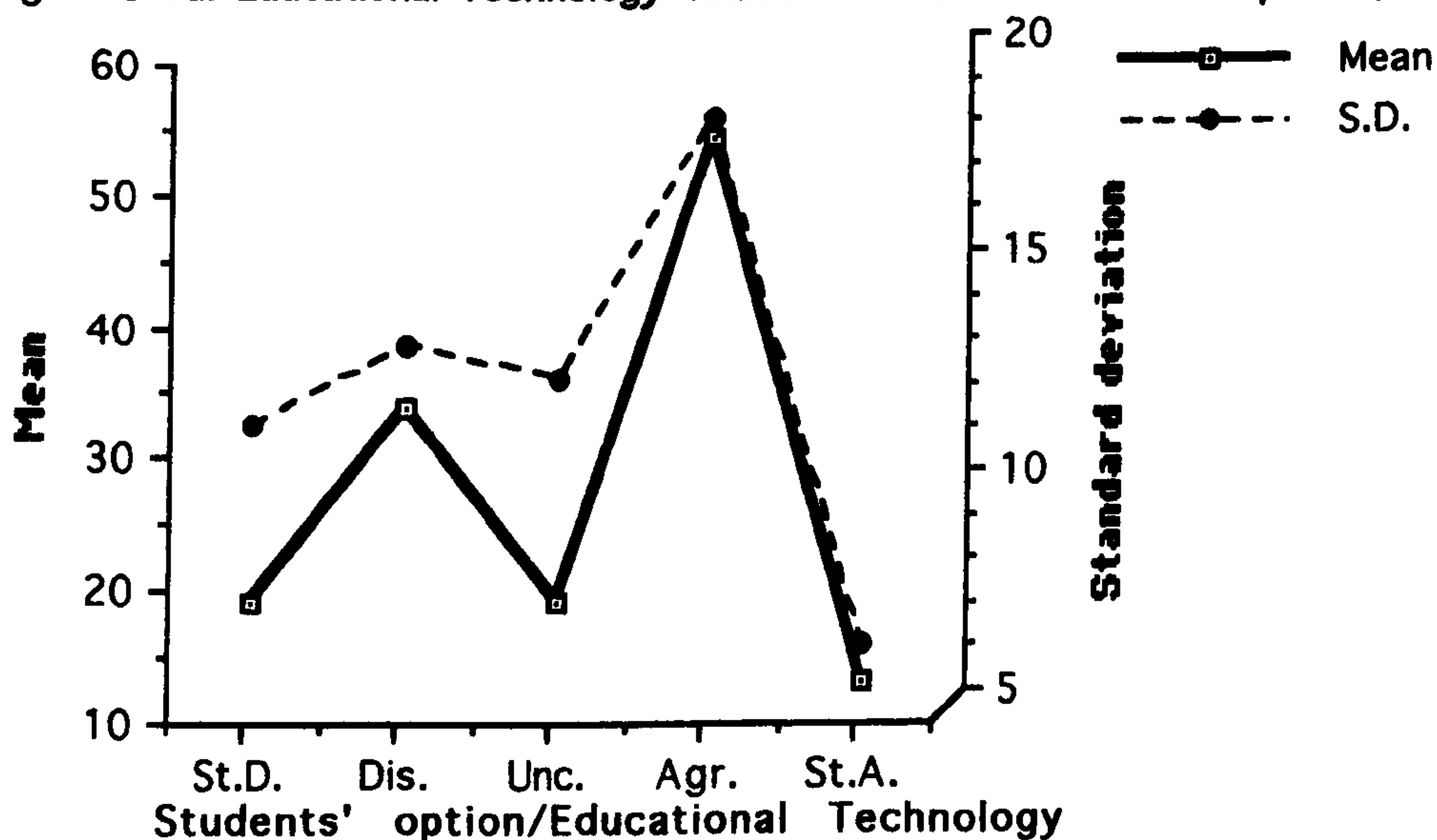
third term of the study. The least selection and most agreement among the students were related to the "Strongly Agree" option.

Figure 8-11: Biophysics from the students' viewpoint (n=136)



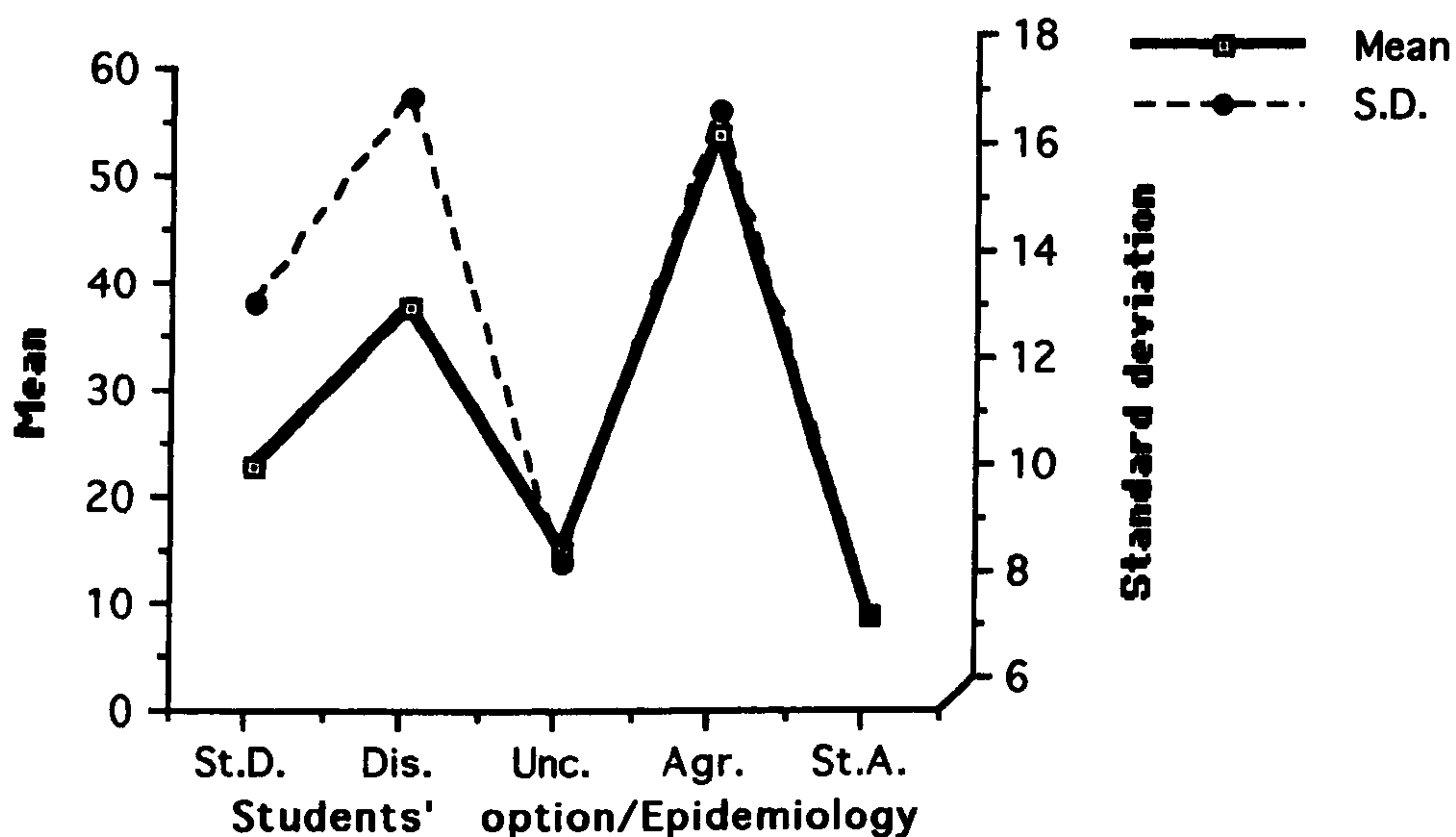
The Educational Technology course is taught during the fifth term of nursing study. Many of the students marked the "Agree" options and believed it to be useful course. However, there was not a high agreement among the respondents.

Figure 8-12: Educational Technology course from the students' viewpoint (n=136)



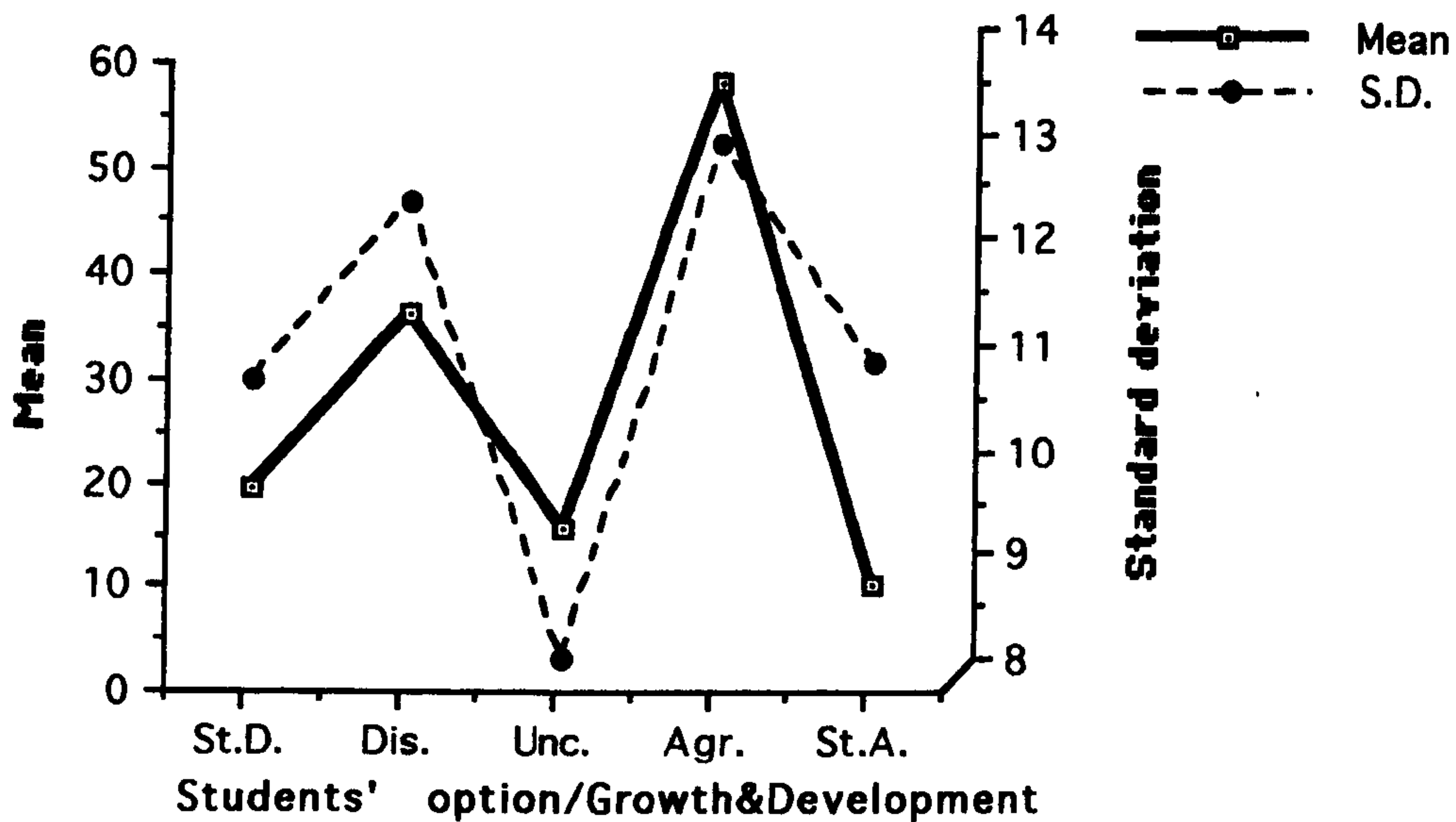
The Epidemiology course is a part of the courses of the fourth term of the nursing programme. The most frequent selections of the students was "Agree". The number of opponents of this course was not high, however the discrepancy about the different components of it was high among the students.

Figure 8-13: Epidemiology course from the students' viewpoint (n=136)



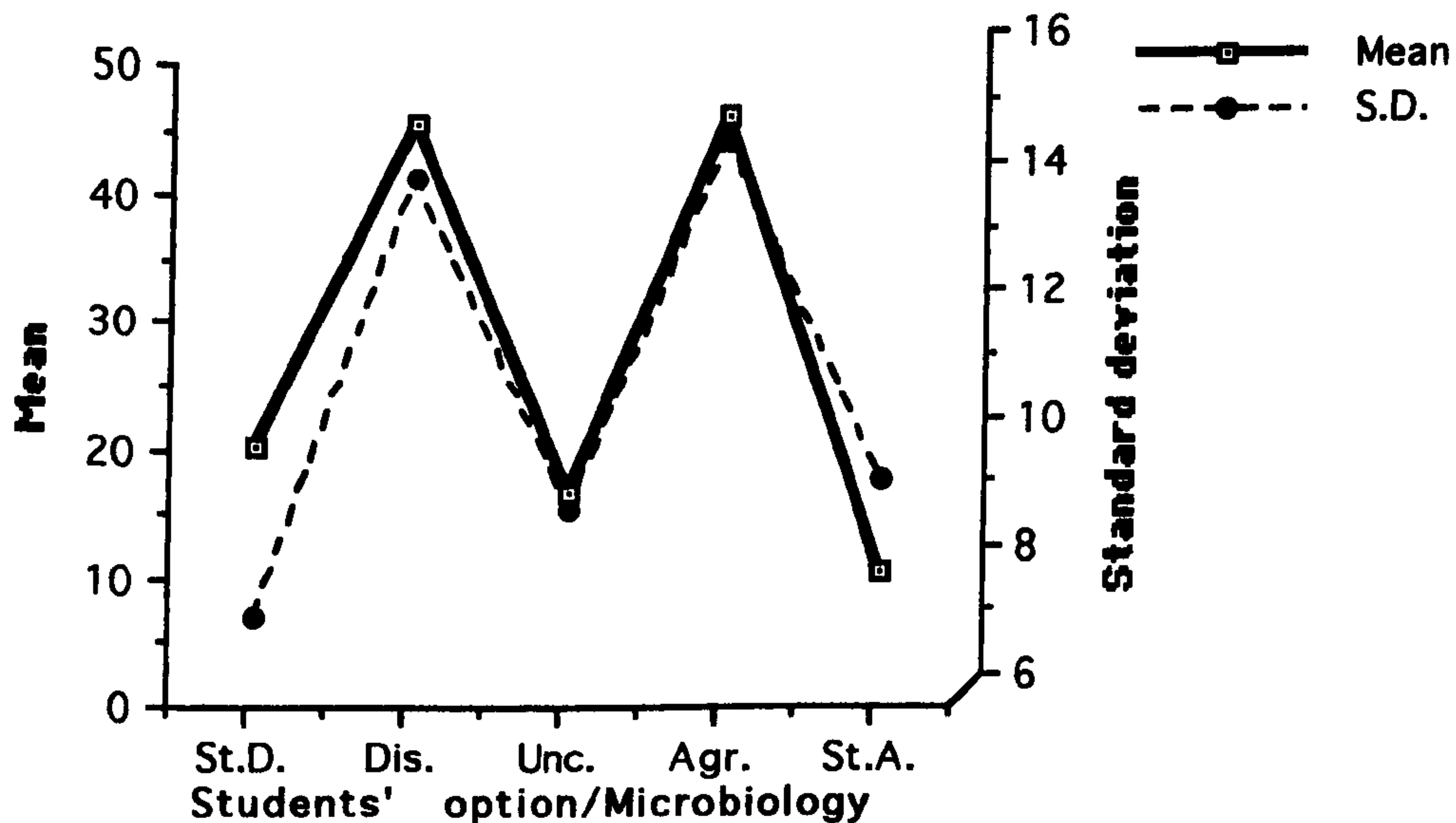
The Growth and Development course is a prerequisite course which is usually presented in the fourth term of nursing study. As Figure 8-14 illustrates, most of the selections were "Agree". The students who were undecided, had the highest agreement for their decision making.

Figure 8-14: Growth & Development course from the students' viewpoint (n=136)



The Microbiology course is taught in the second term of B.Sc. nursing study. The number of options on the "Disagree" and "Agree" choices and also the level of standard deviation were equal. It means that there is a notable discrepancy among the students about this course.

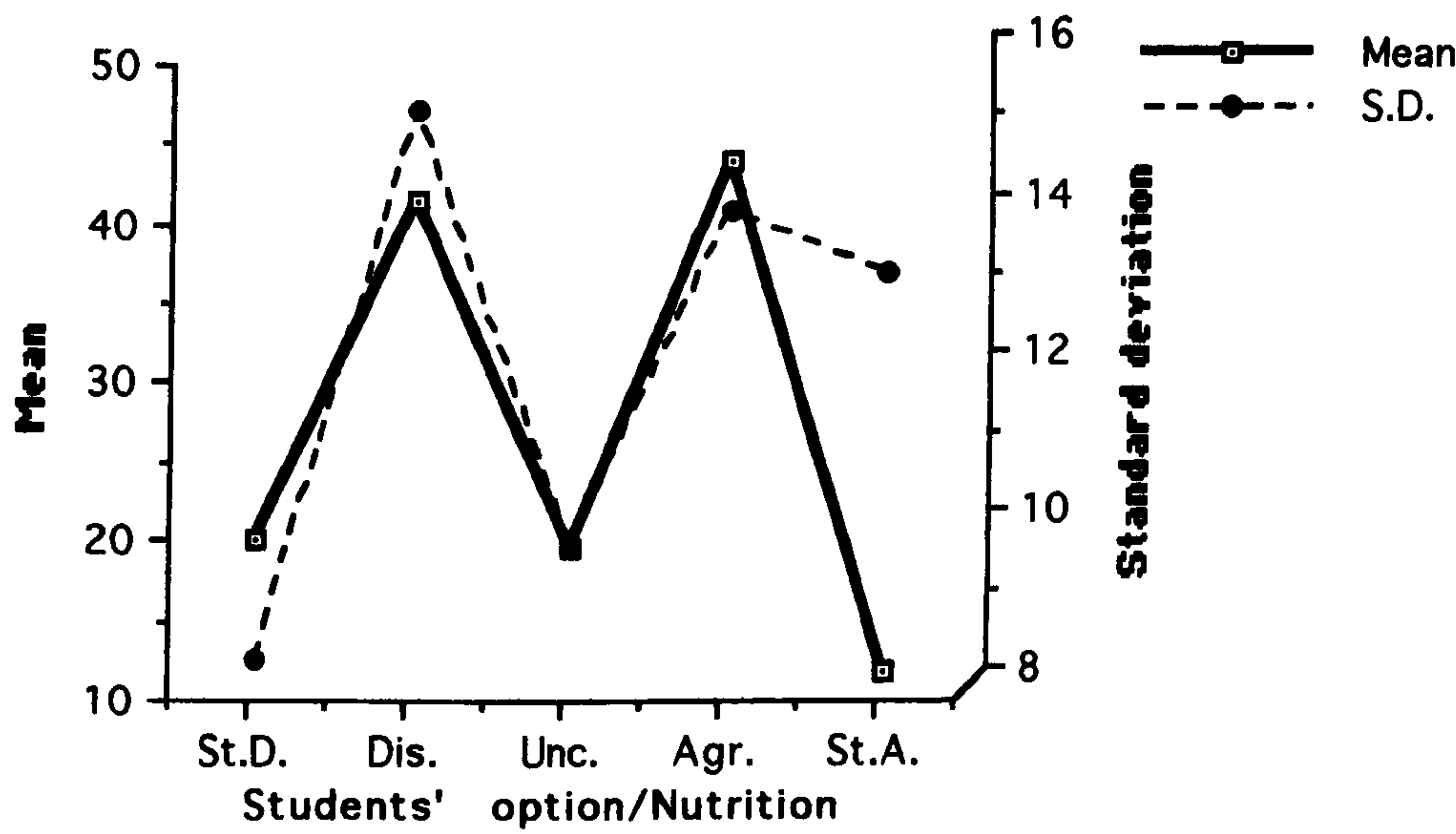
Figure 8-15: Microbiology course from the students' viewpoint (n=136)



The Nutrition course is presented during the second term of study as Regular Nutrition and during the third term as Therapeutic Nutrition.

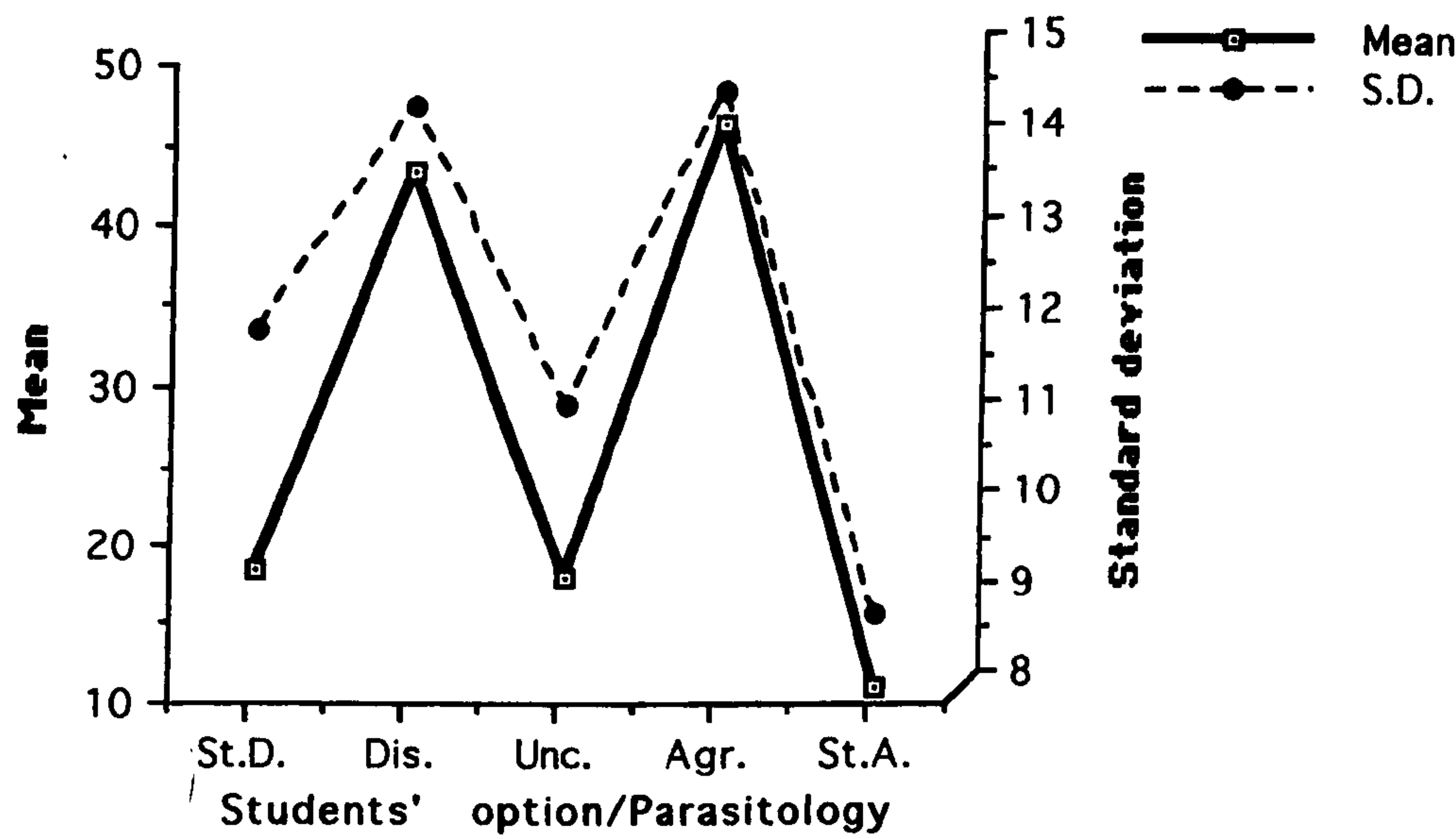
The relative equality of the "Agree" and "Disagree" choices and also their standard deviation could be interpreted as the discrepancy of the respondents for selection of the different components of this course. On the other hand, it is not clear which of these two kinds of the "Nutrition" has been evaluated by the students or which of them had a more weight in this assessment.

Figure 8-16: Nutrition course from the students' viewpoint (n=136)



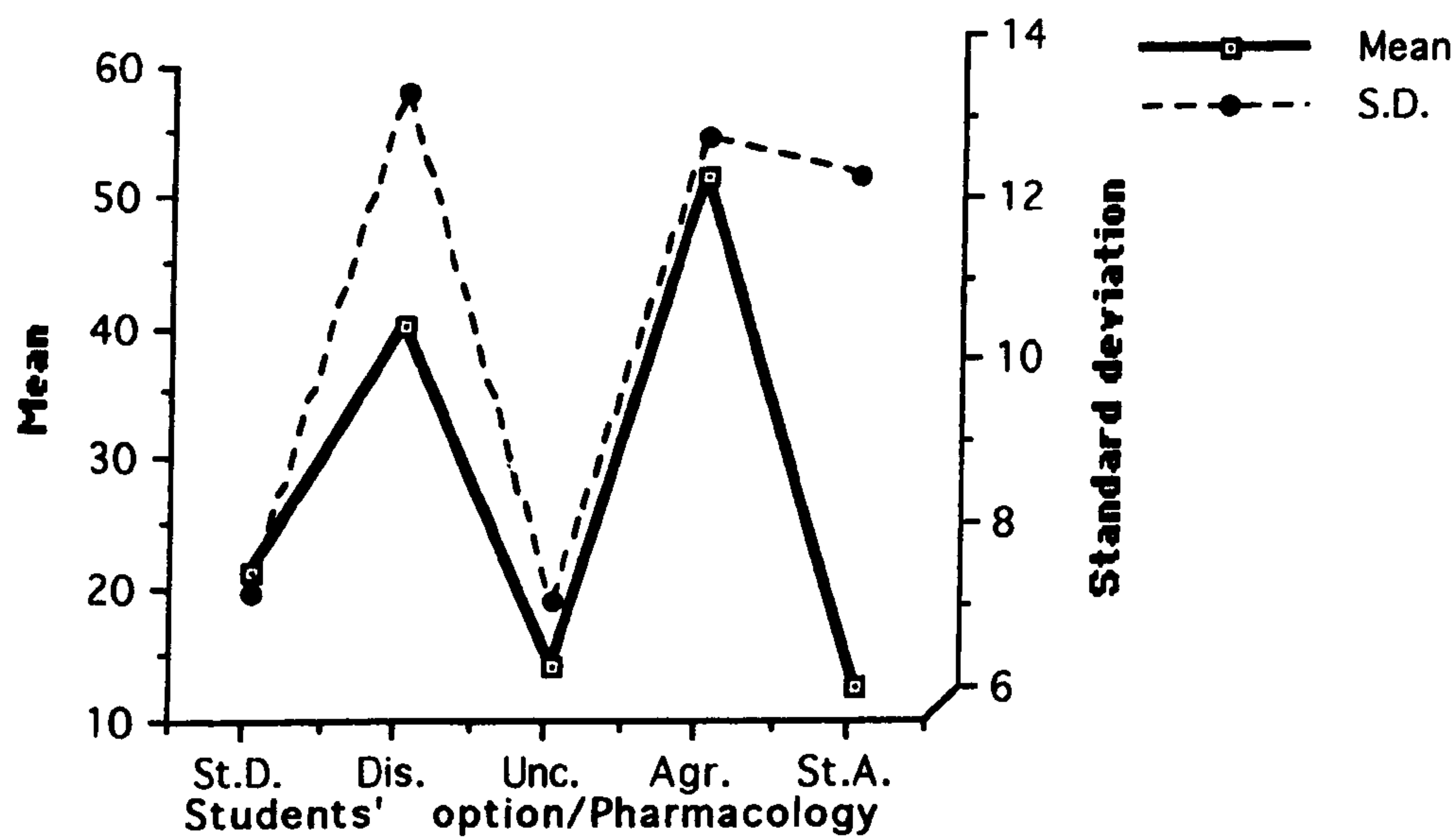
The Parasitology course is taught together with Fungiology as a course during the second term of the nursing programme. Most of the selections of the respondents were the "Agree" and "Disagree". Similar to the "Nutrition" it is not clear that which of the two courses, Parasitology and Fungiology has been evaluated by the students.

Figure 8-17: Parasitology course from the students' viewpoint (n=136)



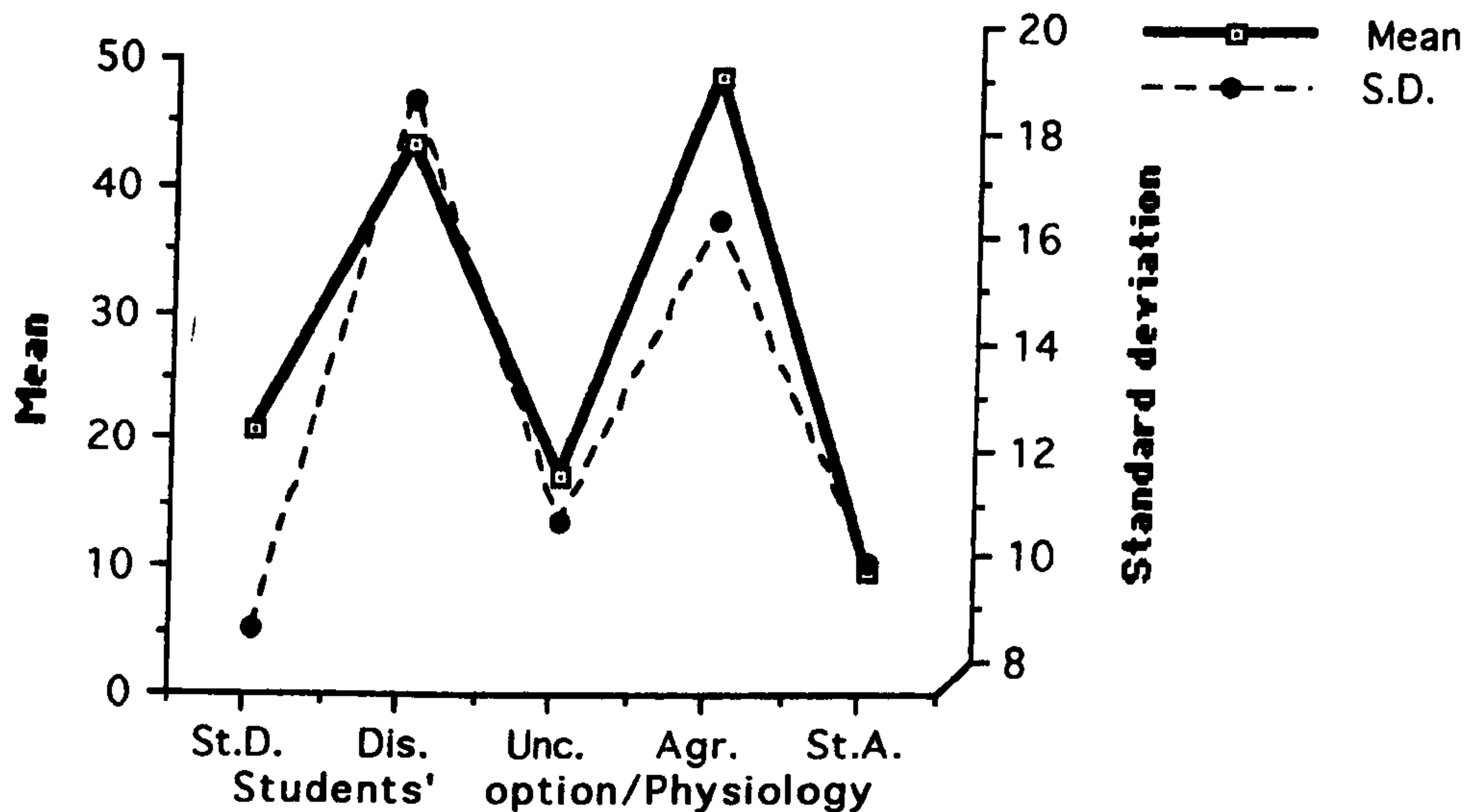
The Pharmacology course is presented during the second and the third term of nursing study in two separate parts. As Figure 8-18 shows, most of the selections of the students were "Agree" and a small number of them were undecided. In general, many of the respondents believed this course to be useful course.

Figure 8-18: Pharmacology course from the students' viewpoint (n=136)



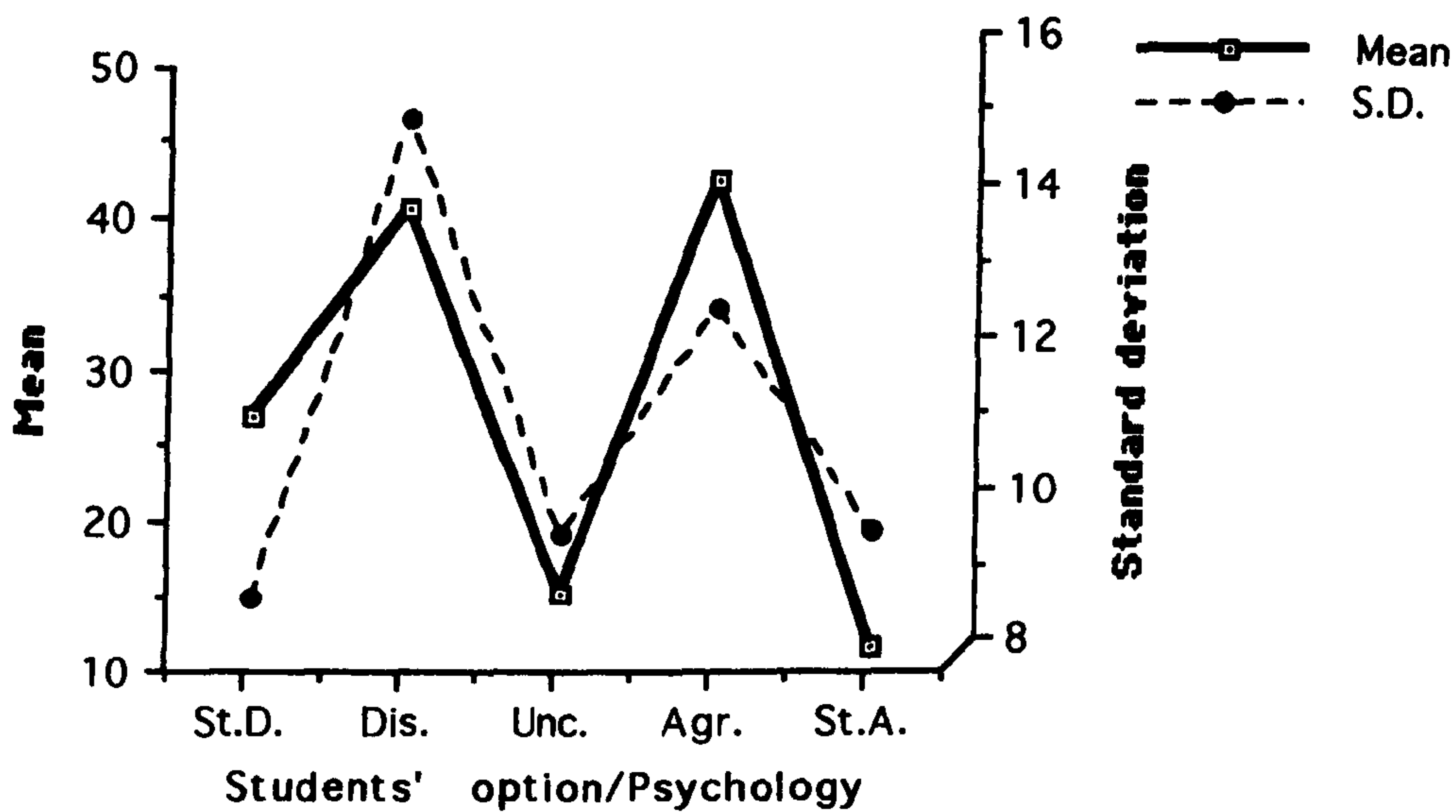
The Physiology course is usually taught in two separate parts during the first and the second terms of B.Sc. nursing study. The "Strongly Agree" was the least selections of the respondents. Similar to the Pharmacology, many of the students found this course desirable.

Figure 8-19: Physiology course from the students' viewpoint (n=136)



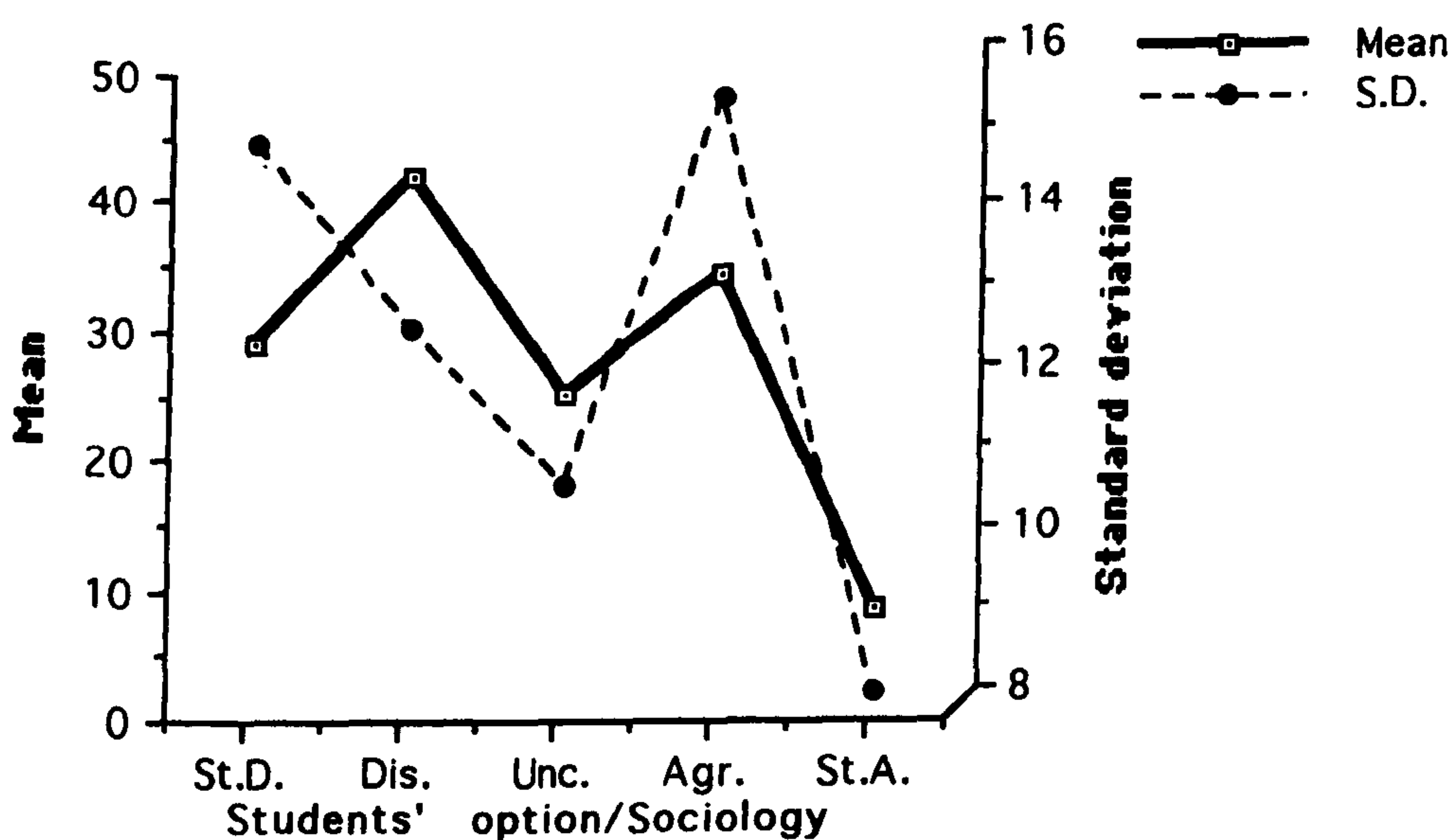
The Psychology course is presented during the third term of nursing study as a prerequisite of Psychiatric nursing. Most of the selections of the students were the "Agree" and "Disagree". The highest agreement was for the students who had not a positive perception about the course (tendency to the left for the Strongly disagree options).

Figure 8-20: Psychology course from the students' viewpoint (n=136)



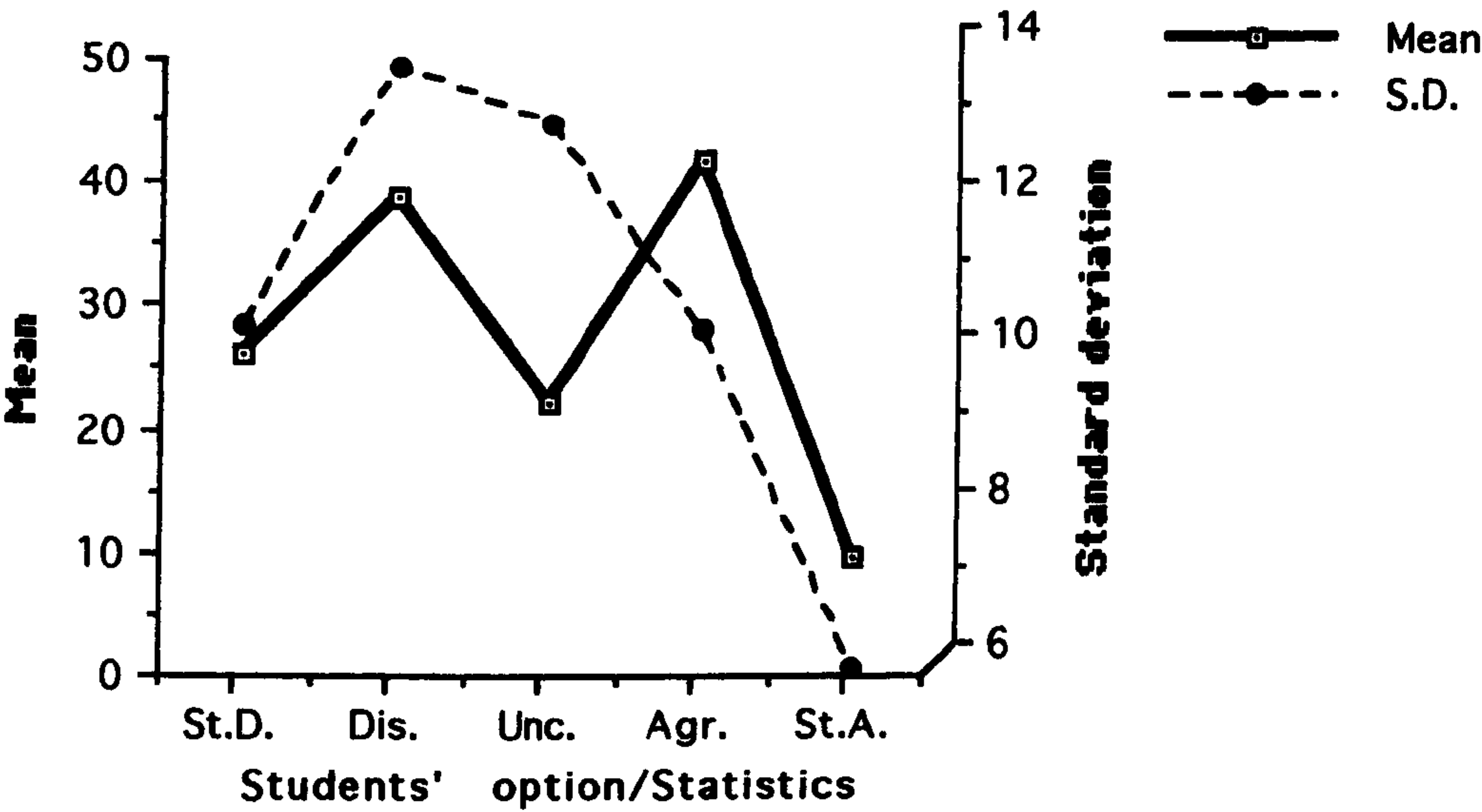
The Sociology course is taught during the fifth term of nursing programme. In contrast to the other courses, as Figure 8-21 shows "Undecided" answers were high. In general the negative perception about this course was more than the positive perception (more tendency to the left), particularly the highest discrepancy was for the "Agree" option.

Figure 8-21: Sociology course from the students' viewpoint (n=136)



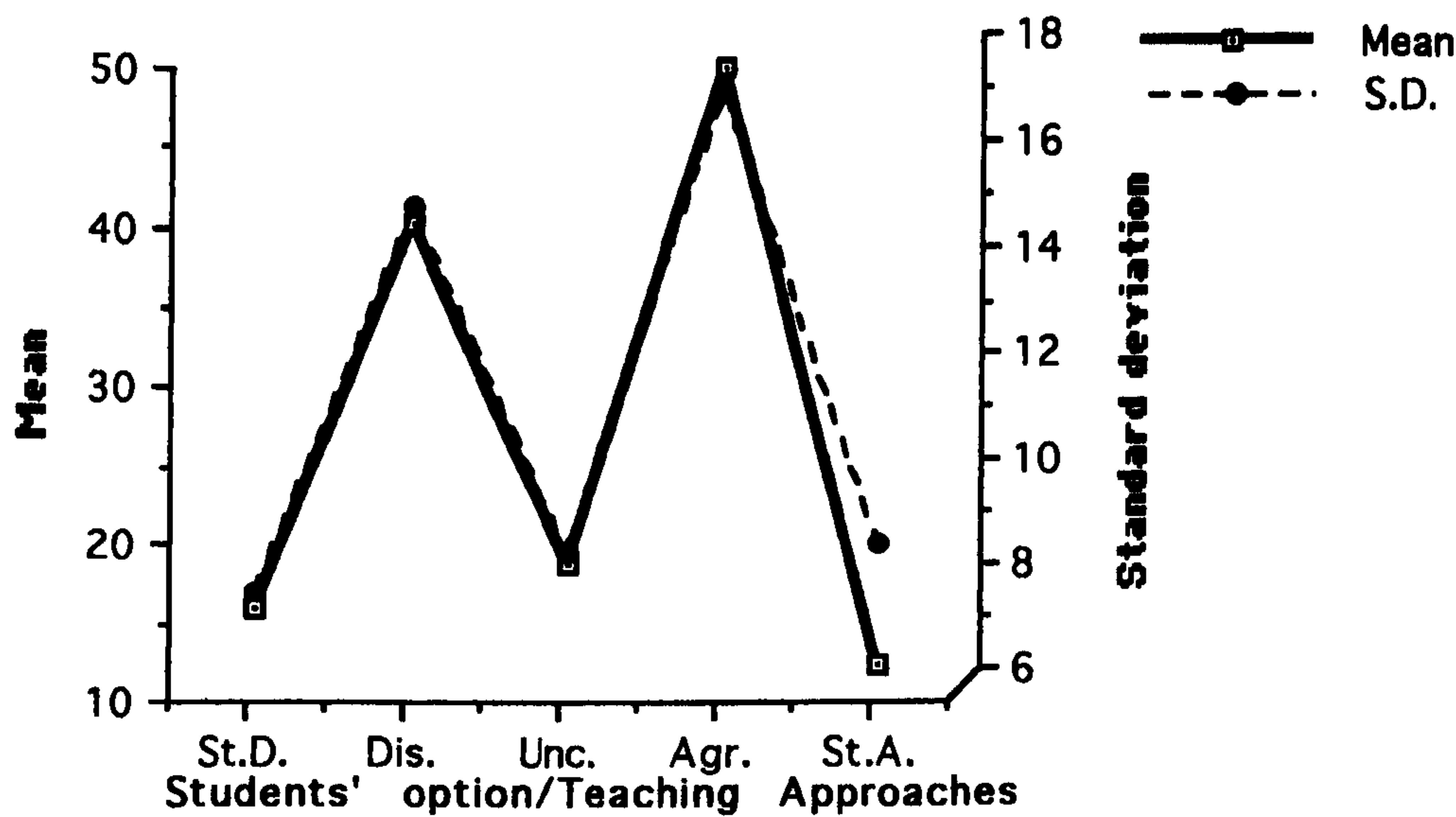
The Statistics course is presented during the fifth term of nursing study. Most of the selections of the students were "Agree". The highest agreement was among the students who had a positive perception (tendency to the right side).

Figure 8-22: Statistics course from the students' viewpoint (n=136)



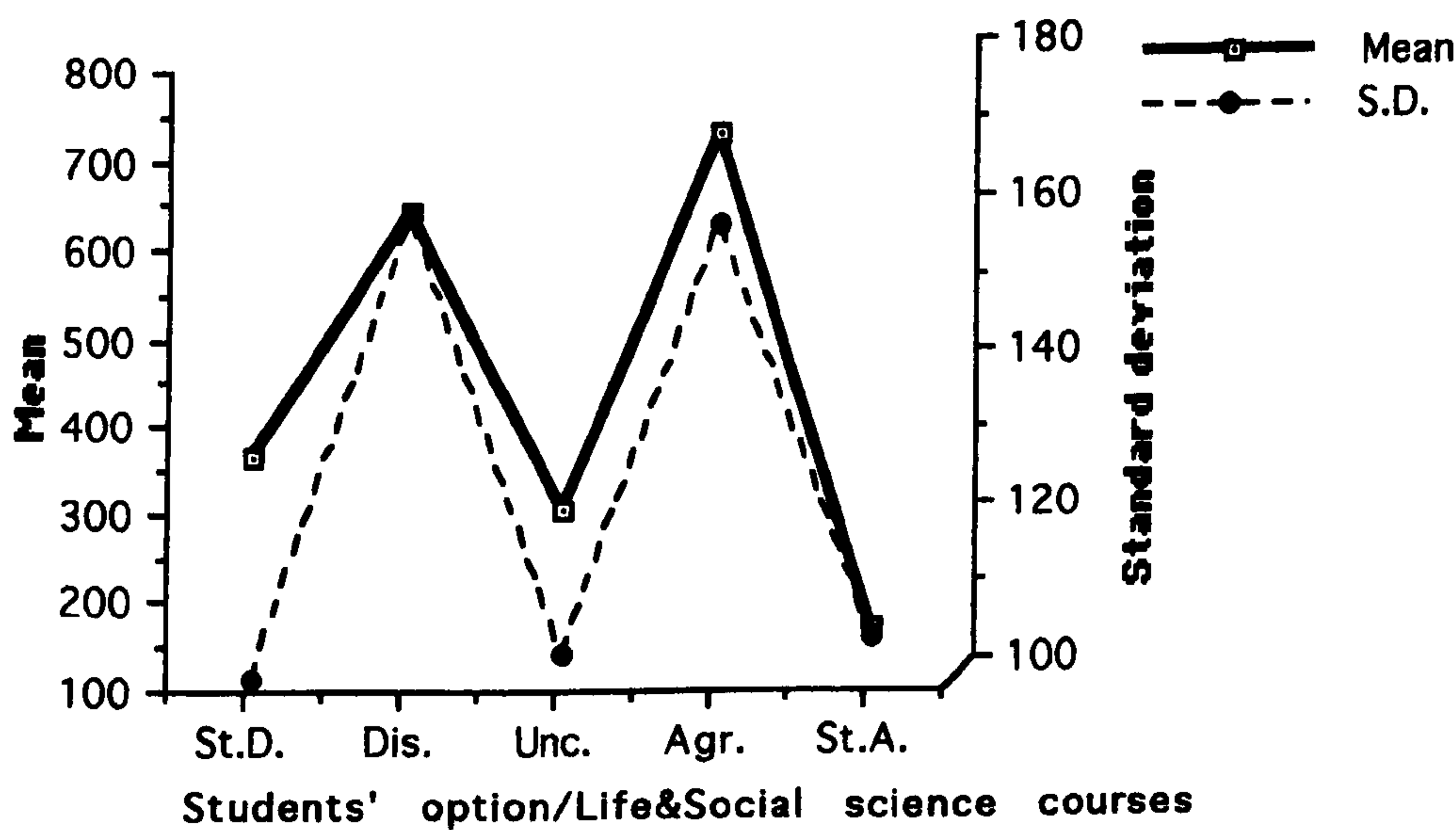
The Teaching Approaches course is taught during the seventh term of nursing study. In this course, one of the most important tasks of nurses, i.e. patient teaching and also clinical teaching to the other health personnel is taught. Therefore, Teaching Approaches is part of the nursing curriculum. As Figure 8-23 illustrates, the most frequent option of the respondents was "Agree". The pattern of the choices and also their standard deviation is very similar.

Figure 8-23: Teaching Approaches course from the students' viewpoint (n=136)



As Figure 8-24 indicates, the most frequent responses were related to the "agree" and "disagree" choices. The most "standard deviations" were also about the same items. It means that the respondents regarded the different components of these courses completely different.

Figure 8-24: Life & Social science courses in total from the students' viewpoint (n=136)



8.22 Percentage scores

In order to compare the perception of the students about the different components of nursing, life and social science courses relating to nursing, the gained scores were promoted to percentages that the results are illustrated and described in Tables 8-1 and 8-7.

Table 8-1: Scores given by the students to the different components of the nursing courses of the curriculum

	Goal	Content	Methodology	Evaluation
Health	43.6	41.8	39.3	31.4
Management	51.7	52.6	48.6	43.3
Med-Surgical	45.1	44.9	41.6	34.1
*M.C.H.	35.2	46.2	38.4	38.9
Paediatric	47.1	49.8	40.4	40.0
Psychiatric	48.2	43.3	41.3	43.4
Mean	45.1	46.4	41.6	38.5
s.d.	5.6	4.1	3.6	4.9

(*M.C.H.= Mother and Child Health Nursing, s.d. = standard deviation)

The highest score of the nursing courses in total was for "Content" (46.4%) and the lowest score was for "Evaluation" (38.5%). Among the courses, the lowest score was for "Evaluation" part of the "Health" nursing course (31.4%) and the highest score was for "Content" of "nursing Management" (52.6%). In addition to the evaluation part of the curriculum, the "Methodology" component was also controversial. It gained relatively a few score on mean (41.6%) by the students, whereas the respondents had the highest level of agreement on it (3.6%). Hence, it could be concluded that the most controversial component of the nursing curriculum was the "Evaluation" one.

As it was mentioned in the last chapter, the means of the two populations could be comparable when the variances of the two populations are equal. The variances of the two samples are convenient

but, the variances of the two populations are not. Therefore, the situation of the variances of the two samples was compared by the F-Test. The results is demonstrated by Table 8-2.

Table 8-2: F values of scores given by the students to the different components of the nursing courses of the curriculum

	Goal	Content	Methodology	Evaluation
Goal	-			
Content	0.8	-		
Methodology	5.8	3.7	-	
Evaluation	0.8	2.1	1.4	-

(Critical value of F at 5% probability is **15.44**, *p* value is **.05**)

Since the obtained values of F-test of all components of the nursing curriculum were less than the critical value of F at 5% probability, the differences among the variances of each component of the curriculum were not statistically meaningful in the population and therefore, the means were comparable.

The obtained *t* value of the Goal-Content and Methodology-Evaluation fell within the critical value of *t* at 5% probability, therefore the difference among the mean scores of the exceeded values were statistically significant in the population (*) and the students regarded them in different ways. In other words, the students regarded only the Goal-Content and Methodology-Evaluation components as the same in the population (their variances' differences were not statistically significant).

To discover whether there was any association between each component of the curriculum from the students' point of view, correlation coefficient was used. Then, to provide an adequate explanation of *r* and to illustrate its specific applications, analysis of

linear regression was applied for the correlated items. Table 8-3 is related to the mentioned measurements.

Table 8-3: Correlation coefficient of score given by the students to the different components of nursing courses of the curriculum

	Goal	Content	Methodology	Evaluation
Goal	-			
Content	0.4	-		
Methodology	0.8	0.7	-	
Evaluation	0.4	0.6	0.5	-

(Critical value of Z at 5% probability is 1.96, *p* value is .05)

As it can be observed, none of the above correlation coefficients were complete. The highest associations in the samples were between the "Goal" and "Methodology" (+0.8). To test the above results in the population, since the obtained values of Z-test were less than the critical level of Z at 5% probability (1.96), none of the components of the nursing courses of the curriculum from the students' point of view had a statistically significant correlation in the population.

Descriptive and inferential statistics were applied for different nursing courses (like the components of the curriculum) in order to answer the research questions.

Table 8-4: Mean and standard deviation of scores given by the students to the different components of nursing courses of the curriculum

	Mean	Standard deviation
Management	49.1	4.2
Health	39.0	5.4
Mother&Child Health	39.7	4.6
Medical-Surgical	41.4	5.7
Paediatric	44.3	4.9
Psychiatric	44.0	2.9
Nursing Courses	43.4	4.1

The highest mean score (49.1%) was for nursing Management and the lowest level of agreement (s.d. = 5.7%) was for Medical-Surgical nursing. To test the above results in the population, the situation of the variances of the two samples should be compared by the F-Test. The following table indicates the results.

Table 8-5: F values of scores given by the students to the different components of nursing courses of the curriculum

	Health	Management	Med-Surg	M.C.H.	Paediatric	Psychiatric
Health	-					
Management	31.8	-				
Med-Surg	146.3	94.1	-			
M.C.H.	0.0	0.2	0.0	-		
Paediatric	2.7	6.1	3.4	0.5	-	
Psychiatric	0.5	0.3	0.3	0.6	0.6	-

(Critical value of F at 5% probability is 15.44, Med-Surg = Medical-Surgical, M.C.H. = Mother and Child Health nursing, *p* value is .05)

Since most of the obtained values of F-test of nursing courses were less than the critical value of F at 5% probability, the differences among the variances of the exceeded values of nursing courses (Health, Management and Medical-Surgical nursing) from the students' viewpoint were statistically significant (**). It means that the means of the other courses (under critical value) were not statistically significant and they could be compared with each other.

The obtained *t* values of all the items fell less than the critical value of *t* at 5% probability (2.228), i.e. the differences among the means of the nursing courses (except Health, Management, Medical-Surgical) were not statistically significant and the students regarded them similarly in the population.

Measurement of correlation coefficient was the answer to the

question, "is there any relationship between nursing courses of the curriculum from the students' point of view?" The following table indicates the results of Pearson's Product-moment.

Table 8-6: Correlation coefficient of scores given by the students to the different components of nursing courses of the curriculum

	Health	Management	*Med-Surg	M.C.H.	Paediatric	Psychiatric
Health	-					
Management	1.0	-				
Med-Surg	0.3	0.0	-			
M.C.H.	1.0	1.0	0.2	-		
Paediatric	0.9	0.8	0.5	0.8	-	
Psychiatric	0.4	0.4	0.5	0.4	0.5	-

(Critical value of Z at 5% probability is 1.96. *Med-Surg = Medical-Surgical, M.C.H. = Mother and Child Health, *p* value is .05)

Many of the correlation coefficients were high. Among the above associations, the highest associations in the sample were 1.0 between the Health and Medical-Surgical nursing, Management and Medical-Surgical nursing, Management and Health nursing.

Since the obtained values of Z-test were less than the critical level of Z at 5% probability, different courses of the nursing curriculum from the students' point of view had not a statistically significant association in the population except Health, Management, and Medical-Surgical nursing (**).

Variability of one variable resulted from the changes of the other variable in the mentioned correlated items was tested. Since the observed values of F-test of the correlated courses (Management, Health, and Medical-Surgical nursing), were more than the critical region, from the students' point of view, the Regressions of the correlated nursing courses of Health, Management and Medical-Surgical nursing were not

linear $p < .05$ (maybe they are curvilinear).

The other category of the courses in the nursing curriculum is the life and social science courses related to nursing. The results of the students' evaluation of different components of these courses as percentage scores are indicating by Table 8-7.

Table 8-7: Percentage of scores given by the students to the different components of the life and social science courses related to nursing

Courses	Goal	Content	Methodology	Evaluation
Anatomy	45.8	42.8	42.8	38.5
Biochemistry	45.5	48.1	39.9	40.9
Biology	51.8	50.9	43.6	48.0
Biophysics	40.7	50.2	40.4	36.5
Educ.Technol.	51.6	53.1	47.7	33.2
Epidemiology	54.8	50.9	42.3	41.4
Growth.Develop	55.5	56.8	45.2	42.9
Microbiology	48.5	47.7	46.7	43.1
Nutrition	53.0	51.9	43.3	39.7
Parasitology	47.1	54.4	48.5	39.2
Pharmacology	52.6	51.8	45.8	45.6
Physiology	50.5	48.0	44.1	45.8
Psychology	48.2	42.6	41.3	43.4
Sociology	48.6	47.2	31.0	37.5
Statistics	47.4	45.0	43.5	40.4
Teach. Approa.	51.4	50.7	51.0	46.9
Mean	49.6	49.5	43.6	41.4
S.d.	3.7	3.8	4.4	3.9

Among the four components (goal, content, methodology, evaluation) of the life and social science courses related to nursing in total, the highest score (49.6%) was given to the "Goal" and the lowest score (41.4%) was for the "Evaluation". Most of the scores were under

fifty percent. The highest score (56.8%) was given by the students for the "Content" of the Growth and Development and the lowest score (31%) was given for "Methodology" of the Sociology. Among the "Goals", the highest score was for Growth and Development (55.5%) and the lowest score was for Biophysics (40.7%). The Growth and Development course gained the highest score among the "Contents" (56.8%) and the lowest was for Psychology (42.6%). Among the "Methodologies", the highest score was for Parasitology (48.5%) and the lowest was for Sociology (31%). The highest score among the "Evaluations" was for Biology (48.0%) and the lowest was for Educational Technology (33.2%).

As mentioned earlier, similar to the nursing courses, descriptive and inferential statistics were applied for the life and social science courses in two stages. The first was on different components of the life and social science courses of curriculum related to nursing, and the second was on different courses of the life and social science courses related to nursing.

Overall, the mean score of the different parts of the life and social science courses related to nursing were under fifty percent. Among the four components of the curriculum, the mean scores of "Goal" (49.6%) and "Content" (49.5%) were close. That was despite the fact that the scattering of the options on the "Content" (3.8%) was more than the "Goal" (3.7%). They also gained the highest mean scores. Similar to the nursing courses of the curriculum, the lowest mean score of the life and social science courses relating to nursing was for the "Evaluation" part (41.4%).

The first measure was the analysis of variances of each component

of the life and social science courses relating to nursing. The results of the F-test are indicated by Table 8-8.

Table 8-8: F values of scores given by the students to the different components of the life and social science courses related to nursing

	Goal	Content	Methodology	Evaluation
Goal	-			
Content	4.7	-		
Methodology	1.4	2.8	-	
Evaluation	2.6	0.3	1.3	-

(Critical value of F at 5% probability is **2.86**, *p* value is **.05**)

Since the observed values of F-test of the different components of the life and social science courses relating to nursing except Goal-Content and Content-Methodology, were less the than critical value of F at 5% probability, the difference among the variances of the exceeded value of the components from the students' viewpoint were statistically significant in the population (*). It means that the means of the other items were not statistically significant and were comparable with each other.

The obtained *t* value of the components of the life and social science courses relating to nursing (except Goal-Content and Content-Methodology) fell within the critical level of *t* at 5% probability (2.447), i.e. the differences between the means of these components were not statistically significant in the population or the students regarded the components of the life and social science courses similarly.

The correlation coefficient was calculated to discover whether there was any association between each pair of the components of the life and social science courses relating to nursing.

Table 8-9: Correlation coefficient of scores given by the students to the different components of the life and social science courses related to nursing

	Goal	Content	Methodology	Evaluation
Goal	-			
Content	0.5	-		
Methodology	0.3	0.4	-	
Evaluation	0.4	0.0	0.3	-

(Critical value of Z at 5% probability is 1.96, *p* value is .05)

None of the above correlation coefficients were statistically significant and the relationship of two components, Content and Evaluation was equal to zero. It means that they had not a linear correlation (it could be a curvilinear).

To test the above results in the population, since the observed values of Z-test were less than the critical level of Z at 5% probability, except the Z of Goal-Content components (1.98) that had a linear correlation, the rest opinion of the respondents about the components of the curriculum in the population were independent. In other words, each different components of the life and social science courses related to nursing had not statistically significant association in the population.

The observed value of the F-test of correlated components for Regression was more than the critical region, i.e. the Regression of Goal-Content of the life and social science courses relating to nursing was not linear in the population (perhaps it was curvilinear).

In the following, by Table 8-10 in order to facilitate the comparison of the different courses of the life and social science courses related to nursing, the mean and standard deviation of these courses are demonstrated.

Table 8-10: Mean and standard deviation of scores given by the students to the different components of the life and social science courses related to nursing

Life & Social sci. Courses	Mean	Standard deviation
Anatomy	42.4	2.9
Biochemistry	43.6	3.8
Biology	48.6	3.7
Biophysics	41.9	5.8
Educational Technology	46.4	9.1
Epidemiology	47.3	6.5
Growth & Development	50.1	7.0
Microbiology	46.5	2.4
Nutrition	47.0	6.5
Parasitology	47.3	6.3
Pharmacology	49.0	3.8
Physiology	47.1	2.7
Psychology	43.9	3.0
Sociology	41.1	8.3
Statistics	44.0	2.9
Teaching Approaches	50.0	2.1
Life & Social courses	46.0	4.1

As the above table shows the highest (50.1%) mean scores of the life and social science courses related to nursing was for "Growth and Development" course and the lowest of them (41.1%) was for "Sociology" course. In total, the scores gained by these courses were under fifty percent.

The situation of the variances of the two samples are compared by the F-Test. Regarding the variety of the courses, only the exceeded F values are illustrated as follow:

Table 8-11: Exceeded F values of scores given by the students to the different components of the life and social science courses related to nursing

	Growth	Microbio	Nutrit.	Pharma.	Physio.	Socio.	Statist	T. App.
Anatom	-	20.3	-	-	-	-	43.7	-
Bioche	18.6	-	-	-	-	-	-	-
Biology	-	-	-	-	-	50.0	-	-
Epidem	-	50.1	-	-	-	-	-	19.7
Ed.Tec.	17.4		32.1	80.6	15.6	-	-	-
Growth	-	-	64.8	46.2	-	-	-	-
Microbi	-	-	-	-	-	-	23.7	25.2
Nutritio	-		-	41.0	-	-	-	-
Pharma	-	-	-	-	-	16.2	-	-
Physiol	-	-	-	-	-	19.0	-	-

(Critical value of F at 5% probability is 15.44, p value is .05)

Since the observed values of F-test of many of the courses of the life and social science courses related to nursing were less than the critical value of F at 5% probability, the difference among the variances of the exceeded values were statistically meaningful in the population (*, **). Hence, the means of the other courses were comparable with each other. Since t obtained of more than one-sixth of the values fell greater than the critical value of t level at 5% probability (2.447), those courses related to the exceeded values of t , were regarded differently in the population or the students believed that most of the life and social science courses of the curriculum had similar values in their relationships.

To discover whether there was any association between each pair of courses of the life and social courses related to nursing, correlation coefficient was calculated. In the following, only those results which were concerned to the correlated courses are described. The rest were not indicated, because the descriptions are too long and also the other courses had not any meaningful relationship.

Table 8-12: Correlation coefficient of scores given by the students to the different components of the correlated courses of the life and social science courses related to nursing

	Microbiolog	Nutrition	Pharmacolog	Sociology	Statistics
Anatomy	-	-	-	-	1.0
Biochemist	-	-	-	0.9	-
Ed.Technol.	1.0	-	-	-	-
Epidemiolog	-	1.0	1.0	-	-
Growth&D.	-	1.0	1.0	-	-
Microbiolog	-	-	-	-	1.0
Nutrition	-	-	1.0	-	-

(Critical value of Z at 5% probability is **1.96**, p value is **.05**)

The above correlation coefficients were strong in the sample. The observed values of Z-test were less than the critical level of Z at 5% probability, each two items in the population were independent or, except the courses which had a statistically significant relationship in the population (**), there were no statistically meaningful association between each pair of the life and social science courses relating to nursing.

Since the observed values of F-test of the above correlated courses (for Regression) were more than the critical level of F at 5% probability, none of the Regressions of the correlated life and social science courses related to nursing were linear (maybe they were curvilinear).

8.3 Scores of each part of different courses of the curriculum by characteristics of the students

As it was mentioned in the introduction of this chapter, one of the objectives in this study was determination of any relationship between

the evaluation scores given by the respondents to the components of the curriculum according to their characteristics. The age was the first characteristic of the students which its association with their responses was assessed.

Table 8-13: Scores given by the students to the different components of nursing courses of the curriculum according to their age groups

Curriculum components	20-24	25-29	30+
Goal	3585	819	198
Content	3911	508	129
Methodology	3195	567	310
Evaluation	2997	504	271
Total	13688	2398	908
Average score	122.2	141.1	129.7
Mean	3410.2	599.5	227
Standard deviation	401.7	149.1	80.1

The highest average score (141.1%) in the age groups was for age group 25-29 and the lowest (122.2%) was concerned to the first group. It can be observed that the highest agreement was among the students in age group more than 30. The group with the highest score had also the highest discrepancy. The variances of the two populations according to the age groups of the respondents was compared by the F-Test. The results are shown by Table 8-14.

Table 8-14: F values of scores given by the students to the different components of nursing courses of the curriculum according to their age groups

	20-24	25-29	30+
20-24	-		
25-29	0.0	-	
30+	11.0	0.0	-

(Critical values of F at 5% probability is 15.44, p value is .05)

The obtained values of F-test of the students' point of view on their age groups about nursing courses of the curriculum were less than the critical level of F at 5% probability, i.e. the differences between the variances of each age group of the students were not statistically significant in the population (*).

Since the obtained *t* fell after the critical region at 5% probability (2.447), all of the differences among the mean scores of the students by their age group were statistically meaningful (**) and they regarded different parts of the nursing courses of the curriculum differently.

The correlation coefficient was applied to discover whether there was any association between each component of nursing courses of the curriculum from the students' viewpoint according to their age group.

Table 8-15: Correlation coefficient of scores given by the students to the different components of nursing courses of the curriculum according to their age groups

	20-24	25-29	30+
20-24	-		
25-29	0.2	-	
30+	0.9	0.1	-

(Critical value of Z at 5% probability is 1.96, *p* value is .05)

According to the above data, one of the correlation coefficient were statistically significant in the sample. In order to test these results in the population, since the obtained values of Z-test were less than the critical level of Z at 5% probability, none of the age groups had a statistically significant association in the population (**).

The second characteristic of the students was their gender. By Table 8-16 the scores given to the nursing courses of the curriculum according to the gender of the respondents is indicated.

Table 8-16: Scores given by the students to the different components of nursing courses of the curriculum according to their gender

Curriculum components	Female	Male
Goal	3322	1280
Content	3243	1305
Methodology	2880	1192
Evaluation	2659	1113
Total	12104	4890
Average of gender's scores	130.1	113.7
Mean of components' scores	3001	282.3
Standard deviation	1222.5	87.6

Since the observed value of the Kruskal-Wallis Test $H = 5.33$ exceeded the critical region of H at 5% probability (3.84), the difference among the mean score of gender groups of the students on their opinions in evaluating the nursing courses of the curriculum was statistically significant in the population (*).

When there was a two series of nominal data, the Kolmogorov-Smirnov Test is a test of whether two independent samples have been drawn from the same population (this test was described in the last chapter in details). The value of $K_D = 0.75$ is significant at 5% probability level therefore, it could be concluded that, the evaluation scores of the nursing curriculum by the students and the gender of the respondents were not identical (*) and their expected values were believed to be different. The strength of this relationship between the two variables in this case was $p_T = 0.02$, it means that the association between gender of the students and their opinions about different components of the nursing courses of the curriculum was not statistically significant in the population.

Any clinical contact with patients could affect the opinions of the

students in evaluating the nursing courses of the curriculum. The results of the last characteristics of the students on their decisions was assessed and indicated by Table 8-17.

Table 8-17: Scores given by the students to the different components of nursing courses of the curriculum according to their nursing experience prior the B.Sc. course

Curriculum components	No Experience	*L.P.N.
Goal	4530	72
Content	4323	225
Methodology	3678	394
Evaluation	3272	500
Total	15803	1191
Average of experience's scores	123.5	148.9
Mean of components's scores	3950.7	297.7
Standard deviation	580.0	188.3

(* L.P.N. = Licensed Practical Nurse)

Only a small number of the students had nursing experience in form of L.P.N. prior B.Sc. studying and the rest of them had not any nursing experience. The observed value of $H = 5.33$ was greater than the critical level of H at 5% probability (3.84), i.e. the difference among the variances of nursing experience of the students before B.Sc. studying on their opinions in evaluating the nursing courses of the curriculum was statistically significant (*) and the students according to their nursing experience regarded the curriculum in different ways.

The results of the Kolmogorov-Smirnov Test indicated that the two variables, evaluation scores of the nursing curriculum by the students and the nursing experience of the respondents before the commencing B.Sc. course, were not identical (*) and their expected values were believed to be different.

The strength of this relationship between the two variables in this

case was $p_T = 0.22$, it means that the association between nursing experience of the students prior B.Sc. studying and their opinions in evaluating the different components of the nursing courses of the curriculum was not statistically meaningful in the population.

The situation of the responses of the students to the items of the life and social science courses related to nursing according to their characteristics are measured by the following tables. As the nursing courses, the first characteristic of the respondents was the age groups.

Table 8-18: Scores given by the students to the different components of the life and social science courses related to nursing according to their age groups

Curriculum components	20-24	25-29	30+
Goal	11364	977	615
Content	11425	839	571
Methodology	9422	954	604
Evaluation	9555	926	587
Total	41766	3696	2377
Average of experience	372.9	217.4	339.6
Mean of components	10441.5	924	594.2
Standard deviation	1102.0	60.4	19.3

The highest average score of the respondents was related to the age group 20-24 (372.9%). It means that the highest score was given by the youngest students to the different components of the life and social science courses of the curriculum. The variances of the two samples were compared in the population by the F-Test as Table 8-19 indicates.

Table 8-19: F values of Scores given by the students to the different components of the life and social science courses related to nursing according to their age groups

	20-24	25-29	30+
20-24	-		
25-29	0.3	-	
30+	0.5	22.8	-

(Critical values of F at 5% probability is 15.44, *p* value is .05)

The obtained values of F-test of students' point of view on their age group in evaluating the life and social science courses related to nursing except 25-29/30+ (*), were less than the critical value of F at 5% probability. Therefore, the difference among the variances of the other age groups of the students were not statistically significant and their means were comparable. Since all of the obtained *t* values fell greater than the critical level of *t* at 5% probability (2.447), difference among the mean scores of students' response by age were statistically significant (**) and they regarded the parts of the life and social science courses related to nursing as courses with different values.

Table 8-20 demonstrates the results of Pearson's Product-moment whether there was any association between each component of the curriculum from the students' viewpoint according to their age group.

Table 8-20: Correlation coefficient of scores given by the students to the different components of the life and social science courses related to nursing according to their age groups

	20-24	25-29	30+
20-24	-		
25-29	0.4	-	
30+	0.1	1.0	-

(Critical values of Z at 5% probability is 1.96, *p* value is .05)

It can be seen that one of the above correlation coefficients was

complete and had a high correlation in the sample. Since the obtained values of Z-test were less than the critical level of Z value at 5% probability, there was no statistically meaningful relationship between each two age groups in the population.

The other characteristic of the students, their gender, and its relationship with the scores given by the respondents in evaluating the life and social science courses related to the nursing was assessed as Table 8-21 indicates.

Table 8-21: Scores given by the students to the different components of the life and social science courses related to nursing according to their gender

Curriculum components	Female	Male
Goal	7843	5113
Content	8751	4184
Methodology	7103	3977
Evaluation	6233	4935
Total	29930	18209
Average of gender's score	321.8	423.5
Mean of components' scores	7482.5	4552.2
Standard deviation	1071.5	556.0

Scores of the Goal and the Content, and also the Methodology and the Evaluation from the students' point of view were close. To analyse the variances, since the observed value of $H = 5.33$ was greater than the critical level of H at 5% probability (3.841), the difference among the variances of the gender of the students in evaluating the life and social science courses relating to nursing was statistically meaningful in the population (**) and hence, the students according to their gender regarded components of the curriculum in different ways.

The Kolmogorov-Smirnov Test indicated that the two variables,

evaluation scores of the life and social science courses related to nursing by the students and the gender of them, were not identical and their expected values were believed to be different (**). The strength of this association between the two variables in this case was $p_T = 0.09$, it means that the association between gender of the students and their opinions in evaluating the different components of the life and social science courses relating to nursing was not statistically significant in the population (*).

It seems that the clinical contact with the patients has not an obvious relationship with the scores given to the components of the life and social science courses related to the nursing. Therefore, the association of evaluating scores of the respondents according to their nursing experience before comencing the B.Sc. course is indicating by the following table.

Table 8-22: Scores given by the students to the different components of the life and social science courses related to nursing according to their nursing experience before B.Sc. course

Curriculum components	No Experience	*L.P.N.
Goal	12074	882
Content	11960	975
Methodology	10231	849
Evaluation	10402	766
Total	44667	3472
Average of experience's score	349.0	434
Mean of components' scores	11166.7	868
Standard deviation	985.4	86.4

(*L.P.N. = licensed practical nurse)

The average score of the unexperienced students (349%) is lower than the L.P.Ns (434%). It means that the experienced students believed more values for the mentioned courses. In order to test this result in the population, the variances were analysed. Since the observed value of H

= 5.33 was greater than the critical level at 5% probability (3.841), the difference among the opinions of nursing experience of the students prior the B.Sc. course in evaluating the life and social science courses relating to nursing was statistically meaningful (*) and they regarded the components of the curriculum in different ways.

The results of the Kolmogorov-Smirnov Test indicated that the two variables, evaluation scores of the life and social science courses related to nursing by the students and the nursing experience of the respondents before commencing the B.Sc. course were not identical and their expected values were believed to be different (*). The strength of the association between the two variables in this case was $\rho_T = 0.01$, it means that the relationship between nursing experience of the students prior B.Sc. studying and their opinions about different components of the life and social science courses relating to nursing was statistically insignificant in the population (*).

Overall: among the characteristics of the students, all of the variables had an association with their decisions in evaluating the curriculum. Those relationships were not statistically significant, and the strength of the association (Tchuproff Contingency Coefficient = ρ_T) was as follow:

Table 8-23: Strength of correlation coefficients of correlated characteristics of the students and evaluation scores given by them to the different components of Nursing, Life and Social science courses related to nursing curriculum

Characteristics	Tchuproff contingency coefficient (ρ_{τ})
Age (*N)	0.18
Gender (*N)	0.02
Nursing experience prior the B.Sc.(*N)	0.22
Age (*L&S)	0.13
Gender (*L&S)	0.09
Nursing experience prior the B.Sc. (*L&S)	0.01

(*N and L&S = Nursing, Life and Social science courses, *p* value is .05)

8.4 Summary: In this research the results are described and illustrated by figures and tables in two chapters. Chapter Seven is concerned with the results of the lecturers' questionnaires and interviews. Chapter Eight describes the findings of the students' questionnaire. The measures taken during the fieldwork are displayed in Appendix A1.

The applied design of the investigation was based on "Triangulation" technique which contrasts and compares different accounts of the same situation. The design was a combination of "Descriptive Methodology", "Evaluation Research" and "Correlational Study" in order to describe the condition of the national nursing programme in Iran from viewpoints of two stakeholders of the curriculum, nurse teachers and nurse students. The samples were chosen by two types of sampling and in two stages: Stratified and Random Sampling. The instruments of data collection were face-to-face interview, direct administering two kinds of questionnaires, and mailing other questionnaires. The process of data analysis and application of statistical approaches were described in terms of descriptive and inferential statistics. In addition, the relationships between the characters

of the respondents and their opinions/attitudes were monitored by correlational studies. The findings are discussed in Chapter Nine.

PART SIX

CHAPTER NINE: DISCUSSION

9.1 Introduction The focus of this research was the curriculum of nursing education in Iran. The research examined the opinions of the two main stakeholders in the nursing curriculum, the lecturers and the students. The respondents' points of view were attained by use of two instruments, two questionnaires and an structured interview. The interviews were based on the structure of the lecturers' questionnaire. Each item of the questionnaire was discussed during the structured interviews with the Head of the Nursing Departments in depth. The environment of the research comprised nursing faculties of the capital city and faculties in the provinces. The students used in the survey had enrolled in the final examination for graduation at the time of data collection (June-July, 1993). The study involved the collection and analysis of a set of opinions about a national curriculum offered by the nursing faculties in the country. As it was mentioned in Part Two, there are a lot of differences among those investigations and this study. The variations are from differences in systems of education to research instruments, samples, methods, etc. The comparison of the results could not be accomplished in all components of the curriculum except Methodology related studies. In some cases which there were some common points between the methodological investigations, they are cited in this chapter.

The findings of the research are described and discussed in terms of answer to the four research questions. The data fall into four categories: Goal, Content, Methodology, Evaluation (for more

information about the components of each curriculum confer to Chapter Four). This categorisation was accomplished in order to compare and complete the research findings.

9.2 The results The most important points that arose from responses to the research questions were as following:

QUESTION ONE: What is the value of each component of the nursing courses of the curriculum from the lecturers' and the students' point of view?

The measurement scale of these perceptions is described in details in Chapter Six hence, the results are mentioned briefly here only as a reminder to the reader. The value of different components and courses of the curriculum from the lecturers and the students were:

- **From the lecturers' point of view**, only the "Evaluation" component of Mother and Child Health Nursing was viewed as very good, whereas "Goal" component of Psychiatric Nursing was evaluated as good and the rest of the courses and their components were classified as fair. From the lecturers' perception, none of the courses and their components of the curriculum were poor or very poor.
- **From the students' point of view**, among the different components of the nursing courses "Evaluation" component of: Health Nursing, Mother and Child Health Nursing, Medical-Surgical Nursing, and that of nursing courses all together were evaluated poor. The component of "Methodology" of Mother and Child Health Nursing was also poor. The rest of the courses and their components were evaluated by the students as fair. They did not evaluate any course and component of the curriculum as "good" or "very good". In summary, the most important views of the respondents were as follow:

9.21 Different Nursing Courses

Health Nursing: this course obtained the lowest scores in the components of content and evaluation from the students' viewpoint. Many of the subjects in this course are taught by practice in health centres, schools, and the other related fields. Therefore, the methodology part of it was acceptable for the students. Among the nursing courses, the highest standard deviation of the students' answer was related to the Health Nursing. This discrepancy and lowest score could be related to some parts of this course which is common with the other courses repetitive. For this reason, some of the respondents found it boring. Another possible explanation can be related to the time table of teaching of this course which is taught in the first and second terms of B.Sc. course. As the students are not familiar with the whole programme, they cannot have an accurate picture of the logical relationship between the courses and also their significance or relevance.

Nursing Management: except the Evaluation components on Nursing Management, the other parts of this course namely Goal, Content, and Methodology obtained the highest scores from the students' viewpoint. Students take this course in the last two terms of B.Sc. study. By then the students have had most of their nursing experience and hence, their maturity and ability for integration and application of their knowledge and skills to the Nursing Management course is greater than before. Usually the nursing plans of the students (as a part of their apprenticeship of Nursing Management) are not administered completely by the staff and so students cannot demonstrate their abilities for use of the theories in management. In many situations, the tutors who know this problem can

hardly find any evidence in support of the students' efficiency in application of theory to practice and therefore, they assess only theoretical knowledge of the students.

Despite the achievement of a good score in the perception of the students (except the evaluation component) and also the positive opinion of the Head of Department in the interview, its content obtained the lowest score among the lecturers' viewpoints. The reasons could be:

- the relativeness of this score, it means that if this component has gained a low score, it is not absolutely insufficient and its level is evaluated in comparing to the other scores;

- another reason is the lack of application of the content of nursing management in the wards. Perhaps, the lecturers realised that the content component of this course is not realistic. They observe that management in the wards is mostly established on something different from those which are taught by them e.g.s individual experiences of the staff, facilities, relationships between nursing staff and doctors and also nursing managers, the number of occupied beds, etc. are the factors that form the basis of nursing management.

Medical-Surgical Nursing: the Goal and Evaluation components gained the lowest scores among the nursing courses from the lecturers viewpoints. Their low scores can be related to many reasons. One of them is the variety of the subjects that are categorised in this course. Indeed, all disorders of whole body of the adult persons are taught as Medical-Surgical nursing. Although the lecturers teach different subjects, they believe that this course (the set of these subjects) is very important and therefore, its shortcomings can have a major influence on the students' knowledge about nursing. The other reason is related to the problem of assessment of the students in several subjects during a short

time. This course is usually taught in the first terms of B.Sc. course that its teaching time table can affect the quality of the teaching methods. The teachers demand more time to assess the students who are inexperienced and young whether they have gained the learning objectives of the procedures or not but, the proposed time for a proper and frequent assessment alongside the teaching is not enough and they should assess the students' abilities randomly.

Mother and Child Health Nursing: while in the perception of the lecturers the methodology of this course obtained the lowest score, the evaluation part gained the highest score. The reason for the high evaluation score can be related to the manner that lecturers evaluate their students. In this course, the students are assessed by teaching and managing the pre and post-natal courses for mothers in health centres. Hence, the tutors can observe the application of knowledge by students in their teaching of mothers. The Head of this Nursing Department pointed out the differences of the interests among the male and female students towards this course.

From the students' point of view, goal and methodology components of this course gained the lowest scores. These low scores were probably influenced by the responses of male students because the Head of this Nursing Department pointed out the differences of the interests among the male and female students towards this course. For male students this course was just theoretical and they did not have any practice in the labour wards and therefore, they were critical of it. The relatively poor view expressed by students of the teaching methods used in the Mother and Child Health Nursing curriculum, could be, among the female students a result of their lack of sufficient practical experiences in

this field (e.g. in labour or pre-natal clinics). Among the male students the poor view could be the result of the restriction of the teaching of Gynaecology for men, based on the moral and cultural principles in the country, where male students are not allowed to have clinical experience in this area. Many of them, regarded it as a feministic course and they were not interested in the Mother and Child Health Nursing course at all. Hence, the theoretical part may have been boring for them.

Paediatric Nursing: none of the components of this course obtained the highest or lowest score from both groups of respondents. The focus of this course is on sick children but, there are many common points in nursing cares of adults and children that they have confronted. Although no part of the Paediatric Nursing gained the lowest scores from the respondents' perception it does not mean that they did not believe it as a course without shortcomings.

Psychiatric Nursing: the interviewee had a very positive view of the course with the exception of the Evaluation component. The other parts of this course gained the highest scores of their lecturers among the nursing courses. Considering the fact the score of evaluation part was very near to the score of the other components of this course, it could be concluded that this low grade is only in comparison of evaluation score of the other nursing courses and it is not related to the shortcomings of the assessment process of Psychiatric Nursing course.

In contrast, the students gave the highest score to the evaluation part of it. It can be related to the method of their assessment by the tutors. The students are evaluated by presentation of case studies whose comprehensiveness demonstrated their understanding of the disorders and

related nursing cares. This course also obtained the lowest standard deviation of the students' point of view. This high agreement was probably related to the time table of teaching of this nursing course which is at the last terms. At that period of time, students are more mature and have enough insight to realize the concepts of the mentioned courses. Therefore, they are sufficiently experienced to apply their knowledge and skills more successfully.

In general, the lecturers' viewpoint about the nursing courses was more optimistic than the students' perception. It could be related to this fact although this curriculum is a national curriculum and had been established and organised centrally however, the curriculum is not isolated from its administrators. Similar to every other curriculum it is accomplished by the lecturers and they participate in presentation of the programme. paying attention to this matter will clear that why they view the shortcomings less than the students.

Among the nursing courses of the curriculum, the lecturers and the students regarded most of the courses differently and the only statistically significant common view points of them were on Nursing Management and Mother & Child Health Nursing. The negotiation among teachers and learners assists them to achieve a common purpose and strategy in teaching-learning process. Students did not regard any of the nursing courses similar to each other. It means that different aspects of nursing courses, particularly their methodology and evaluation, should be illuminated and revised in order to promote the quality of nursing courses.

9.22 Different Components of the Curriculum

Goal except two courses of Medical-Surgical Nursing and Mother & Child Health Nursing, the goal part of the curriculum gained the highest score from the lecturers. However, in those mentioned groups the scores of the goal were very near to the highest scores which were gained by the other courses. Although it can be interpreted that the lecturers believed this component with the least deficiencies this perception could be related to the nature of the Goal components. Usually, when a something is intangible, many of the people have not enough evidence and find it difficult to make judgement about its shortcomings and strengths.

Although from the students' viewpoint, the highest score of the nursing curriculum was for Goal, the highest scattering of their answers was related to this part of the nursing courses as well. Despite this component seemed to have less deficiencies than the others but, when the Goal is very general, everybody will interpret it subjectively and therefore, this ambiguity can affect the level of agreement among the students.

Content except the Medical-Surgical Nursing group that gave the highest score to the content part of their curriculum, none of the other groups rated it as the best component of the curriculum. The interviewees identified the teaching of a wide range of subjects in a short time as a major weakness. Most of the other deficiencies were related to the differences between the situations and facilities of our country and those countries that inspired their nursing curricula.

Among the different components of the curriculum, the content part gained the lowest standard deviation or the least discrepancies between the respondents. Its reason may be related to the high agreement of the respondents to the statement of the questionnaire that explained the

content of the curriculum as: up-to-date, integrated, nursing-centred, adequately sequenced and progressive continued. It could be interpreted that there is only a little need to the revision of this component and most of the efforts of the curriculum developers should be focused on the other parts of it.

Methodology the only common viewpoint of the lecturers and the students was on methodology component of many courses of the curriculum. The lowest score of the lecturers' point of view and the lowest score of the students' point of view were on the methodology of the nursing curriculum particularly methodology of the Mother and Child Health Nursing course. Although each party of the respondents has particular reason for their opinions, the source of their decisions (dissatisfaction) could possibly be related to the high number of students being exposed to the same teaching method namely lecturing. The low rate of audio-visual devices (for example: Over Head Projector, Skeleton, etc.), and the shortage of other resources (for instance: textbooks, periodicals, and so on) may have accounted for the predominant use the lecturing approach and consequently for the low scores from both teachers and students.

In many countries, a textbook may not be useful to the students as a common resource due to cultural or social reasons. For example, there is not any reported case of child abuse (especially sexual abuse) or a dangerous rate of AIDS in the community of Iran. So, these materials (article of journal or book) are seen as having little relevance for the nursing students of Iran. Instead, there are some cases of endemic diseases (e.g.s Malaria, Leprosy), and high rates of infectious diseases (like Dysentery) in some areas of the country that require special publications

but, the resources are not enough or available to provide them.

Even when textbooks are appropriate and available in English, many nursing students are not proficient enough in English language (particularly undergraduate students) to use them. Therefore, they have to rely more on native or translated resources and have not got easy access to the latest findings on practice and theory in each field.

The narrow range of the students' responses (standard deviation) may be related to the methodology of the nursing courses in total. This means that the students' opinion on evaluation of different components of the curriculum were more homogeneous than the lecturers' opinion.

Evaluation Among the different components of the curriculum, the highest score of the lecturers was for Evaluation. They considered it in relation to the other components of the curriculum. This viewpoint is perhaps related to those lecturers who focus on the product of the education instead of its process. They believe that this component could be applied as an instrument of assessing the whole of the curriculum. On the other hand, the widest range of responses of the lecturers was on this component, it means that they had different ideas about it. Interviews also showed similar results. In general, the lack of an appropriate and standardised instrument for assessment of the students with individual differences (varied background, knowledge and skills) were the common points expressed by the interviewees. The head of different educational groups had different opinions on the evaluation component. Some of them, for example, Mother and Child Health Nursing and Medical-Surgical Nursing, believed that the content of the curriculum is too heavy and the time is limited. Therefore, they could not assess their students regularly and adequately. Even if they could, the approaches of evaluation were not focused on the related part of the students' knowledge.

On the other hand, some of the interviewees (for instance, the Heads of Nursing Management and Psychiatric Nursing departments) believed that they can and do effectively assess (especially formative) their students' knowledge. In fact, these opposite views may be related to the arrangement of teaching time of those courses. Some courses like Medical-Surgical and Mother and Child Health Nursing are taught in the first and the second years of the study. In that time, the students have not passed some of the prerequisites courses and are not familiar with many basic concepts of nursing. Therefore, they need much more time to learn principles of diseases and their nursing care. Consequently, the lecturers of those courses are not satisfied with these constraints. However, through time the students get more knowledge and more clinical experience and their learning needs are fulfilled easier and faster than the earlier times. Therefore, the lecturers have less problems in teaching and have more time to assess the students properly.

The lowest score of the nursing courses was given to the evaluation component by the students. This low score was perhaps related to the huge number of students who have been admitted to the universities in the recent years. The students saw that their knowledge and skills were not assessed individually during the course.

It should be considered that the range of the standard deviation of the students' answers to the all components of the curriculum was much less than the range of the standard deviation of the lecturers' answers. This may be accounted for by the fact that students as a group possessed characteristics that were more homogeneous than the lecturers. For example, age (Table 7-8), educational degree (Table 7-12), teaching experience (Table 7-28), etc. were the variables which affected the respondents' decision. There are varied reasons for this discrepancy

between the lecturers' and the students' point of view:

- The supervision of clinical practice needs a long time and in a situation with a lot of students for teaching in the theoretical courses there is little time for the lecturers to supervise all the students in the related numerous fields. Therefore, sometimes the lecturers who teach theoretical subjects cannot teach practice and different tutors are used to instruct the students in practice in the clinic. Thus, despite the existence of a written syllabus, there is not enough coordination between what has been taught in classroom and what is expected from students in clinical situation. The lecturers and also tutors assess the students according to their criteria and the students evaluate themselves differently from those criteria. Therefore, the difference between theory taught and practice may account for the discrepancy between lecturers and students views of the system of evaluation.

- Many of the students do not believe that paper and pencil test could be a real assessment of their knowledge and skills.

- As Morle (1984) stated, many of discrepancies between the perceptions of the nurse teachers about the students' performance are related to their characters. In addition, the students are mostly judged by criterion-referenced techniques whereas, they judge themselves by norm-referenced techniques.

- The results of the study conducted by Karns and Nowotny (1991) showed that nurse educators were searching for a reliable and valid method of grading students and were frustrated with these attempts. They stated that despite the current attempts to develop a tool that could be used in all clinical courses, use of a separate tool for each course was still unsuccessful.

To acquire an answer to the first question of this research namely

what is the lecturers and students evaluation of nursing courses in the curriculum, statistical tests were used to discover whether the results were valid in the population or not. In other words, if this research was not accomplished by sampling, would all the results be the same or not. The findings were briefed as follows:

The F-Test and *t*-Test of means showed no differences among some of the four components of the nursing courses of the curriculum, from the lecturers' and the students' viewpoint in the population. From the lecturers' point of view, except Methodology that was "fair", the other components were regarded "good". From the students' viewpoint, except Evaluation that was regarded "poor", the others were "fair". However, the value of the Methodology was at the lower half of the "fair" (very near to "poor") and values of the Goal and Content were at upper half of the "fair".

Overall: Among the different components of the nursing curriculum, from the lecturers' viewpoint the most attention should be paid to Methodology component of the curriculum. The interviews identified obstacles against carrying out teaching effectively. However, the students believed that the focus of endeavours for improving different components of this programme should be Evaluation component. Hence, amendment to the students' assessment approaches and also reconsideration of teaching strategy can remove the obstacles to the satisfaction of the lecturers and students.

Among the nursing courses of the curriculum, the lecturers and the students regarded most of the courses in different ways and the only common view points of them were on Nursing Management and Mother & Child Health Nursing. The negotiation among teachers and learners would assist them to achieve a common purpose and strategy in teaching-learning

process. Students did not regard any of the nursing courses similar to each other. It means that, although most of any revision of the programme should be focused on the methodology and evaluation components however, in order to promote the quality of nursing courses, the other aspects of nursing courses should not be ignored.

QUESTION TWO: What is the value of each component of the life and social science courses relating to nursing from the students' point of view?

All components of the life and social science courses relating to nursing were evaluated "fair" by the students. However, among those four components, the highest score of the respondents was for the Goal component. Although the score of Goal component was under fifty percentage, the reason of its relative superiority may be connected to the belief of nursing students about the importance of these courses for their profession and relevance to the nursing courses. The evaluation component of the life and social science courses relating to nursing, similar to the nursing courses, gained the lowest score by the students. Some of the reasons that make this component of the curriculum problematic are explained in earlier pages in this chapter.

- Among the Goal component of life and social science courses relating to nursing, the highest score was for the goal of Epidemiology course which presented a general perspective about the diseases and their patterns of distribution. Therefore, the students regarded it valuable and relevant to nursing. Despite the importance of sufficient knowledge about Human Anatomy for better patient care, the respondents did not find the

course attractive and evaluated its goal by the lowest score. This may be related to the deficiency of teaching the concepts of this course practically that does not make the aim of the course useful.

- Among the **Content** components of different life and social science courses relating to nursing, Growth and Development course gained the highest score. The students were interested in this course because it has many advantages in their professional and also their personal life of them. The lowest score was for the Biochemistry course. This course is usually taught with poor application to the nursing courses and therefore, the students regarded it irrelevant and unapplicable.

- Among the **Methodology** components of the life and social science courses relating to nursing, the highest score was for the Physiology course. This course is one of the few courses of the life science courses of nursing programme that is taught both practically and theoretically. Perhaps, the variety of teaching methods for this course has led to the increasing of its attraction. In contrast, the Sociology course gained the lowest score of the students because it is usually taught by lecturing approach exclusively.

- Among the **Evaluation** components of the life and social science courses relating to nursing, Teaching Approaches was evaluated by the highest score of the students. The evaluators also had the highest agreement about the competency of the assessment approaches of this course. Nursing students are usually assessed in this course by presentation of a paper as a teacher and teaching it practically. Therefore, they feel that all of their ability to display their knowledge and skills can be evaluated. In addition, the students regarded it useful for patient teaching. The lowest score was for the Educational Technology which had also the highest standard deviation. This wide scattering of

responses can be related to the conflict that the students on one hand regarded it as useful and on the other hand regarded it with a little application in their study course. In many cases there are not enough educational facilities (Audio-Visual Aid) in a faculty or those instruments are not accessible for all of the students. Hence, the assessment of students in this course is hardly fair.

To test the above findings in the population, F-Test and t-Test of central tendency and dispersion of the students' options on different components of the life and social science courses relating to nursing were accomplished. The value of each component of these courses was regarded by the students in different ways. However, the Goal and Content, as well as the Methodology and Evaluation were considered in a similar way. It means that the value of Goal and Content components of the life and social science courses relating to nursing, as the sample indicated, is seen as more than that of the other two components and the students regarded them with less deficiencies. Therefore, the revision of these courses of the nursing curriculum should be focused more on their Methodology and Evaluation components rather than Goal and Content.

The Z-Test indicated that, the correlation rate between different components of the life and social science courses relating to nursing were very weak (all of the correlation coefficients were under 0.5). Among the different components of the life and social science courses relating to nursing, there was only an association between Goal and Content of those courses (in the population). It could be interpreted that the Content is usually developed according to the Goal. However, it does not mean that one of them is the cause or effect of the other. The regression of the two correlated items was not a linear one (maybe there is a curvilinear relationship). It means that it is difficult to predict changing of one variable under changes of the other. In other words, each time the value

of one correlated component increases, the value of the other component does not show a constant change.

On the other hand, among the different courses of life and social science relating to nursing, only a few of them had a weak correlation coefficient. This test indicated that there are positive and statistically significant relationships between some courses such as: Anatomy and Statistics, Microbiology and Statistics, Biology and Sociology, Educational Technology and Microbiology, Epidemiology and Nutrition, Epidemiology and Pharmacology, Growth & Development and Nutrition, Growth & Development and Pharmacology, Nutrition and Pharmacology. Among these correlated items, the regression of none of them was linear. It means that prediction of changes of one correlated course by alterations of the other is difficult and complex for the curriculum developers. There are some points related to this view that should be considered as follows:

- despite the existence of statistically significant relationships between some of the life and social science courses relating to nursing, there are not any obvious reasons for the existed associations between the above mentioned courses. These associations are formal and difficult of explain because, the nature and subject of many of the mentioned correlated courses are different.

- the outlines of the life and social science courses relating to nursing are very general and ambiguous. These courses are taught by the lecturers who have a little or have no information about nursing, its' content or about task of the students as future nurses. The life and social science courses relating to nursing are not detailed in the curriculum and the lecturers of each course themselves decide about what is necessary to teach to the nursing students. So in this way, the content of the life and

social science courses relating to nursing while interesting may not directly applicable by students to their nursing practice. According to the individual differences among the students, some of them who are not interested in nursing, may prefer to have more knowledge about the life and social science courses. In contrast, the students who are interested in nursing, may prefer greater emphasis on nursing implications in these courses.

- some of these courses are made up of two subjects. For instance, "Nutrition" course is a combination of regular and therapeutic nutrition. It is not clear which subjects were being evaluated by the students in responding to the items of the questionnaire. Therefore, it seems that a more in-depth scrutiny is necessary for these courses.

Overall: the analysis of variance of responses to the different components of the life and social science courses relating to nursing from the students' point of view showed that the students regarded the components of the life and social science courses relating to nursing in different ways. However, the Goal and Content, as well as the Methodology and Evaluation were considered in a similar way. The deficiencies of the methodology and evaluation of the life and social science courses relating to nursing were more than that of the other two components. Hence, in order to promote the quality of the life and social science courses relating to nursing, each course and each component should be assessed and their shortcomings modified separately. It is necessary that most of the endeavours to be focused on their Methodology and Evaluation components of these courses rather than their Goal and Content.

QUESTION THREE: Are there any associations between the lecturers' and the students' point of view in evaluating the different components of nursing, life and social science courses relating to nursing?

The purpose of this question was to find out whether there is any common point among the lecturers and the students about strengths and weaknesses of the nursing curriculum. In order to investigate the association, the possibility of relationships between the two viewpoints was studied by measurement of correlation coefficients. Regarding the variation of the components, courses and respondents, the mean of only those items could be matched and compared. These findings are discussed in the following:

- **among the different components** of the curriculum, despite the existence of high and positive correlation in the samples between some components of nursing courses of the curriculum from the lecturers' and the students' viewpoint, there was no statistically significant correlation between opinions of the respondents in evaluating the components of nursing courses of the curriculum. In other words, the respondents had varied perceptions about the competencies and deficiencies of each components of the nursing curriculum. It could be concluded that changes of each component of the nursing curriculum cannot alter the other components and therefore, when a curriculum developer wants to improve the quality of the nursing courses of the curriculum he/she should consider all of the components independently.

There was an association between the Goal and Content of the life and social science courses relating to nursing from the students' point of view. In order to predict the changes of one correlated component from alteration of the other, the regression of their relationship was monitored.

The applied test indicated that their regression is linear that means the increase (or decrease) of quality or quantity of Goal component of the life and social science courses relating to nursing will lead to the increase (or decrease) of quality or quantity of Content component. In other words, the lecturers should note that any unregarded change of one correlated component may affect the other.

- **among the courses**, at first the common points of the lecturers of each educational group with the views of the students on the courses of the same nursing group were examined. Then the common points of the lecturers about different nursing courses were studied. At the end, the common views of the students about the nursing, life and social science courses relating to nursing were identified.

- The only common viewpoints of the lecturers and the students in the samples, was on courses of Nursing Management and Mother & Child Health Nursing. The applied tests indicated that those respondents did not have similar views on the courses of the nursing curriculum in the population. In other words, none of the respondents' opinion on different courses and also components of the curriculum were similar.

- The viewpoints of the lecturers about the different nursing courses were not comparable because, each educational group responded to the questionnaire according to their own subjects and on the basis of the specifications of their subjects.

- The viewpoints of the students on different nursing, life and social science courses could be compared with each other (the respondents were common for all of the courses). Among the nursing courses, the only common point of the students were correlation of nursing courses of the Management, Health and Medical-Surgical Nursing therefore, there is a relationship among the above correlated courses. The test of null hypothesis of correlated courses indicated that

none of the regressions were linear (maybe there is a curvilinear regression). It means that to improve the quality of the nursing courses, instead of any changes on some parts or some courses, all components (Goal, Content, Methodology, Evaluation) of the courses should be involved.

Among the life and social science courses, although some of the courses were correlated statistically, it does not seem that the associations is reasonable (because of the varied natures and subjects of those correlated courses). None of the regressions of those correlated courses were linear and the prediction of the value of those courses is complex. Therefore, all components of the life and social science courses relating to nursing should be considered individually when these courses are revised by curriculum developers.

Overall: Regarding the above results, it seems that if both teachers and learners of nursing education have common purposes, in many ways their educational activities will be coordinated and in the same direction. The differences in viewpoints of the lecturers and the students on the courses should be identified to prevent any possible changes which may disregard the views of one of the groups on nursing courses of the curriculum. In this way, they can cooperate and collaborate their educational activities more effectively.

QUESTION FOUR: Are there any associations between the respondents' (the lecturers and the students) characteristics and their opinions in evaluating the different components of the nursing, life and social science courses relating to nursing curriculum?

The association of the respondents' characteristics and their viewpoints about the nursing curriculum is investigated by answering to the last question. It does not mean that those independent variables (the respondents' characteristics) have directly effects on the evaluation of the curriculum. The assessment of a causal relationship demand an experimental design that the conditions are under control of the researcher. Therefore, the association of demographic data of the lecturers and the students with evaluation of nursing, life and social science courses relating to nursing were identified.

- **Gender:** There was a correlation between the gender of the respondents and their opinions in evaluating the curriculum. The strength of this relationship was not statistically significant. Perhaps the existence of this slight association is related to the Mother & Child Health Nursing course. It was indicated in the sample that there was a high correlation between the gender and evaluation scores of this nursing course. Therefore, in this study the relationship of gender with evaluation of the curriculum could be ignored except in evaluating the Mother & Child Health Nursing course. It could be concluded that the gender of the respondents had a relationship with their opinions only in evaluating the courses that have a relationship with the gender and its effects may be ignored for the other courses.

- **Age:** the hypothesis "the age of the respondents could have an association with their opinions in evaluating the different components of the curriculum" was investigated. The results indicated that none of the correlation coefficients of the age groups of the lecturers and students was

statistically significant. In other words, there was not any meaningful relationship between the age of the respondents and their opinions in evaluating the nursing courses of the curriculum. When the age of the respondents had not any relationship with their opinions, the age as an effective variable could be ignored in this study and also in any revision of the programme.

- **Nursing experience:** The hypothesis "more contact with patients could change the respondents' perception about the nursing, life and social science courses relating to nursing curriculum" was investigated. There was a positive association between evaluation of nursing courses of the curriculum and the clinical experience of the lecturers and the students (before commencing B.Sc. course) in the samples. However, this characteristic had not any statistically significant association with the evaluation of the curriculum in the population. It could be concluded that the practical aspects of the curriculum was in the light of the theoretical aspects and the respondents focused their attention to the theory instead of both of them and therefore, the association of their clinical experience and evaluation of those courses is not significant.
- **The last degree, educational major, B.Sc. degree experience, M.Sc. degree experience, teaching experience, and educational responsibilities of the lecturers:** except the length of time since the B.Sc. and M.Sc. graduation of the lecturers that had not any relationship with the evaluation score (even in the sample), none of the positive associations between the respondents' characteristics and their opinions was statistically significant.

Although the applied test illustrated that at least one of the educational degrees had more scores than the others about nursing courses

of the curriculum, the lecturers' higher degree failed to show a considerable correlation with their opinions.

The lack of statistically significant association between the evaluation score and educational major of the lecturers, could be interpreted that the respondents evaluated their curriculum rationally free from prejudice in the strength and weaknesses of own curriculum.

Except for the existence of a positive correlation between evaluation of the different components of nursing courses of the curriculum and group of the respondents with more than 25 years length of time since M.Sc. graduation, the other groups of experience had not a statistically significant association in the population. It means that the extra study (as M.Sc. course) had not an obvious effect on their opinions. In fact, the influensive factor in decision-making of the group with more than 25 years since M.Sc. graduation could be related to the time and the development of their individual experiences to integrate their knowledge and criticise the curriculum. The effect of experience in evaluation of the curriculum can be also observed in the relationship of teaching time and evaluation of nursing courses by the lecturers. It means that the lecturers with more teaching experience will evaluate the curriculum by a higher level of scores. Perhaps they view the curriculum in a comprehensive way that the lecturers with less experience do not.

Usually the viewpoints of the lecturers in each educational group will reflect to the head of nursing departments. Therefore, they are most informed persons in each educational group about the different aspects of their own curriculum. In general, an extra educational responsibility similar to Head of Nursing Department or Educational Deputy (in addition to the teaching responsibility of a teacher) could cause more comprehensive perception of the existed problems in the nursing

education by the lecturers. In this study, the additional responsibility of the respondents had an association with evaluation scores of the curriculum. Although the strength of this relationship was not statistically significant however, it may indicate that the Head of Nursing Departments were the appropriate persons for in-depth interview about the competencies and deficiencies of the nursing curriculum.

9.3 Summary: The aim of this study was to identify the strengths and shortcomings of nursing curriculum in Iran from the viewpoints of the lecturers and the students. To achieve this purpose, the study set forth four questions that were discussed in this chapter. The value of each component of the nursing courses from the respondents' viewpoint were clarified by answering to the first question. The second question sought the opinions of the students on the value of the life and social science courses relating to nursing. The existence of any relationship between the opinions of the two parties in evaluating the curriculum was monitored by Question Three. At the end, the answers of Question Four examined the relationship of the respondents' characteristics and evaluation scores of the curriculum.

CHAPTER TEN: CONCLUSION

10•1 Introduction: The focus of this research was the curriculum of nursing education in Iran. Although the administration of evaluation is the fourth stage of curriculum planning, by identification of relative strengths and weaknesses of the current curriculum, a basis was provided for programme-improvement decisions. The information was obtained by a combination of different dimensions of the two main approaches of educational investigation, quantitative and qualitative approaches. This research utilized the opinions of the two main stakeholders of the nursing curriculum, the lecturers and the students as the resources of information about the nursing curriculum.

The data were attained by use of two instruments, a questionnaire and an interview. The lecturers and the students chose one of the five provided options in evaluating each components of the curriculum. The opinions of the head of different nursing departments about nursing courses were gained by in depth interview. Nursing faculties of the capital city and of other provinces that had last term students in June, 1993 formed the environment of the research. Therefore, a set of opinions about a national curriculum was provided by participation of several nursing faculties of the country in the research. This study includes eleven chapters from which the most important points are as follows:

Part One, Chapter One: The context of the study was clarified by describing the general policy of The Health Ministry for nursing education and also identification of the main problems of nursing

education relating to the students, teaching staff and facilities available to them. The other related headings were: statement of the problem and its significance, keywords definition, assumptions, limitations of the research and research questions.

Part Two, Chapter Two: Some critical issues in nursing education were reviewed to reveal what has been written about the topic and to utilize the advantages of similar investigations. In this chapter, the investigations on the nursing curriculum in different countries were analysed. Regarding the differences of nursing education and practice from country to country, the research in attempting to solve the problems of those counties were different. However, the inquiries were based mainly on the opinions of **lecturers** and **students** as two main stakeholders of nursing curricula. Some of those studies were focused only on nursing students and some others were established on study of both students and teaching staff. Some of the inquiries were **formative** and the others were **summative** studies, and a few of them used both formative and summative approaches. A number of the investigations were conducted by **qualitative** approaches (observation and interview) and the others were accomplished by **quantitative** approach (questionnaires).

Considering the similarities of the above mentioned inquiries with the existing research (evaluation of the whole of the nursing curriculum), some positive points could be derived among those researches. However, the results were hardly comparable because, there were a lot of differences among them. The generalizations from findings could not be made because, the variations were from differences in systems of education to research instruments, samples, methods, etc.

Part Two, Chapter Three: The investigations on nursing courses or a particular component of nursing curriculum were reviewed. Most of the studies were focused on **situation of nursing education** in different educational institutions, current or desired core concepts of a particular nursing course, and suggestion of solutions for their difficulties. The aim of a few of them was **evaluation of a nursing course** and the performance of the students consequence of some changes in the content. Those studies sought the **opinion of students or director/teaching staff** of nursing institutions. Except for one study, the other investigations did not request and compare the viewpoints of the directors/teaching staff and the students together. The enquiries used two kinds of educational investigations: the **qualitative** approaches (observation and interview) and the **quantitative** approach (questionnaires).

Considering the results of the enquiries in Chapter Three, some positive points among those research were identified. The humanistic phenomena such as education (particularly vocational education) are too complex and focus on only one aspect of inquiry is not satisfactory. Hence, despite the numerous number of the studies on individual courses or a particular aspect of the nursing curriculum, their findings were not generalizable.

Part Three, Chapter Four: The conceptual framework of the study was explained to recognize the applied terms which have been used in this study and also to establish some common notions about them. This chapter was a set of viewpoints of authors in education and nursing about the concept of curriculum and involved: history of curriculum, classification, definitions, its resources and components (aim, content,

methodology, evaluation), curriculum planning groups, and finally models of curriculum planning. Hence, it has been a source for research ideas, orientation to what is known, defining a conceptual context, defining the variables, and finally guiding the design and methods which were applied in this research.

Part Three, Chapter Five: The chapter described the current state of knowledge on the evaluation of the curriculum. Concept of evaluation included: history of evaluation in education, its definitions, characteristics of curriculum evaluation, its types, classification, levels, evaluator's role, and instrumentation of evaluation. The chapter also included the advantages and disadvantages of different models of curriculum evaluation presented by the educationalists. At the end of each section, the appropriate points for this research were concluded.

Part Four, Chapter Six: This chapter described the details of methodological issues which were adopted by the study. Those issues in terms of appropriate points for this research were rationalized in Part Three. The chapter in methodology of the research included: the type of investigation, population, samples, research environment, variables, data gathering, criteria for assessing measuring tool. Several stages from pilot study to final data collection are explained briefly in the Appendix A1.

As the chapter described, the applied design of the investigation was based on "Triangulation" technique which contrasts and compares different accounts of the same situation. The design was a combination of "Descriptive Methodology", "Evaluation Research" and "Correlational Study" in order to describe the condition of the national nursing programme in Iran from the viewpoints of two stakeholders of the

curriculum, nurse teachers and nurse students. The samples were chosen by two types of sampling and in two stages: Stratified and Random Sampling. The instruments of data collection were face-to-face interview, direct administering two kinds of questionnaires, and mailing other questionnaires. The process of data analysis and application of statistical approaches were described in terms of descriptive and inferential statistics. In addition, the relationships between the characters of the respondents and their opinions/attitudes were examined by correlational studies. The measures taken during the fieldwork are displayed in Appendix A1.

Part Five, Chapters Seven and Eight: The results of the research were outlined in Chapter Seven (the lecturers' viewpoint) and Chapter Eight (the students' viewpoint). The characteristics of the respondents are shown by figures in Appendix A3. The percentage scores of the respondents' viewpoint on nursing, life and social science related to nursing were indicated in Tables. The other obtained evaluation scores of the respondents by their characteristics were demonstrated in cross tabulations. The results indicated that, lecturers and students had different priorities in the organization of educational experience. The value of different components and courses of the curriculum from the lecturers and the students were:

- From the lecturers' viewpoint none of the courses and their components were "poor" or "very poor" and most of them were evaluated "fair". The Evaluation part of Mother and Child Health nursing was the only component that was evaluated as "very good". Finally, the Goal part of Psychiatric nursing was "good".

- From the students' viewpoint none of the courses and their

components were "good" or "very good" and most of them were evaluated "fair". The Evaluation part of courses: Health nursing, Mother and Child Health nursing and Medical-Surgical nursing as well as the Methodology part of Mother and Child Health nursing were evaluated "poor".

The details of the results in each educational group were discussed in Chapter Nine and their implications will be described in terms of recommendations in Chapter Eleven. In summary, the most important views of the respondents about the nursing courses were as follow:

Health Nursing: as the data indicated, there was not sufficient coordination between Content of this course and the strategy of World Health Organisation about "Health For All by 2000". The study revealed that the repetition of some subjects and also lack of a logical relationship between the course and their relevance to the tasks of students (as the future nurses) were the major reasons of their viewpoint. This course obtained the lowest scores in the components of the Content and Evaluation and also the highest standard deviation of the students' answers.

Nursing Management: except the Evaluation components, the other parts of this course obtained the highest scores from the students' viewpoint. The staff nurses were not interested in the administration of the nursing plans which the students had offered. Therefore, students could not be assessed fairly in the clinical areas. Despite the achievement of good score in perception of the students (except the Evaluation component) and also positive opinion of the Head of Department in the interview, its Content obtained the lowest score among the lecturers' viewpoints because, in many situations the content of this course was not applicable in the wards regarding the shortcomings in the facilities (equipment) and also the staff numbers.

Medical-Surgical Nursing: components of the Goal and Evaluation gained the lowest scores among the nursing courses from the lecturers viewpoints. The set of variety subjects of this course forms the basis of the students' knowledge in nursing. The study indicated that it is necessary to clarify the goals of different theoretical and practical subjects of this course particularly its behavioural objectives in order to improve the quality of it. Although the students did not gave their high scores to the different components of the Medical-Surgical Nursing course, they had not any major criticism about it.

Mother and Child Health Nursing: from the perception of the lecturers, the Methodology of this course obtained the lowest score. However, the Evaluation part gained the highest score of them. The lecturers assess the performance and knowledge of the students in labour or the pre/post-natal courses which are administered for mothers by the students. From the students' point of view, the major criticisms were stated about the Goal and Methodology components of this course. The study indicated that there is no practice for male students in this course (resulted from the cultural and moral principles of the Gynaecology for men) therefore, it cannot be a useful course for them. Meanwhile, the female students had not sufficient practical experiences in this field.

Paediatric Nursing: the study indicated that although none of the components of this course obtained the highest or lowest score from the both groups of the respondents, it was not a course without any shortcomings. For instance, the theme of the introduced textbook in this course is medicine rather than nursing and therefore, many of the nursing procedures were not emphasised sufficiently.

Psychiatric Nursing: the data indicated that there was a conflict between the two groups (the lecturers and students) about the Evaluation

part of this course. While the lecturers gave their highest scores to the different components of this course (except the Evaluation component), the highest score of the students was for the Evaluation part of it. This course also obtained the lowest standard deviation of the students' point of view. The high score of the Evaluation and also the agreement among the students was related to the maturity of them in the last terms of the study that makes them to be able to apply their knowledge in the practice successfully.

The other objective in this study was the examination of the relationship between different parts of the findings as follow:

- Relationship among the different components of the curriculum, despite the existence of high and positive correlation in the samples between some components of nursing courses of the curriculum, there was no statistically significant correlation between opinions of the respondents (in the population). However, there was an association between the Goal and Content of the life and social science courses relating to nursing from the students' viewpoint. In order to predict the changes of one correlated component from change of the other, the regression of their relationship was monitored. The applied test indicated that their regression was linear.

- Relationship among the different courses, the only common viewpoints of the lecturers and the students in the samples, was on nursing Management and Mother & Child Health nursing. The applied tests indicated that those respondents did not have similar views on the courses of the nursing curriculum in the population. The viewpoints of the lecturers about the different nursing courses were not comparable because, each educational group responded to the questionnaire according

to their own subjects and on the basis of the specifications of their subjects. The viewpoints of the students on different nursing, life and social science courses could be compared with each other (the respondents evaluated all of the courses). Among the nursing courses, the only common point of the students were correlation of nursing courses of Management, Health and Medical-Surgical nursing therefore, there was a relationship among the above correlated courses. None of the regressions were linear. Among the life and social science courses, although some of the courses were correlated statistically but, it dose not seem that the associations to be reasonable (because of the varied natures and subjects of those correlated courses). None of the regressions of those correlated courses were linear.

The last objective of this study was the measurement of the association between the opinion of the respondents and their characteristics. Except the length of time since the B.Sc. and M.Sc. graduation of the lecturers that had not any relationship with the evaluation score (even in the sample), none of the positive associations between the respondents' characteristics and their opinions was statistically significant.

Part Six, Chapter Nine: To achieve the aim of this research, the study set forth four questions that were discussed in Chapter Nine. The value of each component of the nursing courses from the respondents' viewpoint were clarified by answering to the first question. The second question sought the opinions of the students on the value of the life and social science courses relating to nursing. The existence of any relationship between the opinions of the two parties in evaluating the curriculum was monitored by Question Three. At the end, the answers of Question Four examined the relationship between the respondents' characteristics and

evaluation scores of the curriculum.

Part Six, Chapter Eleven: The participants of this study stated that there were some deficiencies in the nursing curriculum. The chapter clarified that every struggle in the way of revising the curriculum should have two aspects, amending the current curriculum and planning continuing education. According to the shortcomings of the curriculum and as the respondents identified (particularly the Head of Nursing Departments in interviews), some points which would lead to raising the quality of nursing services were recommended in terms of undergraduate and graduate programmes. The aim of undergraduate recommendations was to reinforce the strengths and to eliminate the weaknesses of the existing nursing curriculum. The graduate recommendations included the proposed plan that were focused on in-service education for graduate nurses. At the end, to complete this study, some offers were recommended in terms of further investigation.

10•2 Summary: This study about the nursing curriculum in Iran provided some information which may be useful for programme-improvement decisions. It was designed to reveal the deficiencies of the curriculum however, it should be noted that the results are relative. Evaluation is a human judgmental process applied to the results of programme examination and therefore, it cannot be free from errors. The source of those shortcomings is varied and includes: the researcher, the participants (in this case, the lecturers and the students), the design of the project, and finally the methods of data collection and data analysis.

CHAPTER ELEVEN: RECOMMENDATIONS

"Changing the curriculum means making the curriculum different in some way, to give it a new position, course or direction. This often means alteration to its philosophy by way of its aims and objectives, reviewing the content included, revising its methods, and re-thinking its evaluatory procedures. The basis for any major curriculum change is significantly to improve the existing curriculum."

(Greaves, 1987, p.114)

11.1 Introduction Recommendations in this chapter are based on the findings of the study.

As it was mentioned earlier (Chapter One), the policy of the Iranian Government for nursing education in 1985 was to increase the number of many B.Sc. graduate nurses in a short period of time by:

- increasing nursing students intake in the available faculties;
- establishing new nursing faculties in all of the provinces.

Many nursing students graduated according to the above mentioned policy. However, as the Head of Nursing Departments described in interviews, most of the problems in nursing education in Iran were related to the imbalance between the number of students in each intake and faculties' facilities such as: teaching staff, audio-visual aid, libraries (including: librarians, textbooks, periodicals), and clinical areas. Regarding the distribution of the students' intake among the nursing faculties (previously and recently established), it seems that in order to reduce the difficulties, the focus of nursing education be therefore evolved from quantity to quality.

In the first chapter it was stated that at the introduction of the new policy of the Health Ministry for medical education (including nursing), the number of beds in teaching hospitals (clinical areas for students' practice) was not appropriate with the number of different students of the Medical Science Universities. When the Government decided to promote the management system of the non-teaching hospital and changed them to teaching hospitals, nursing faculties' view was that the quality of many of those areas was not as good as those used in teaching hospitals. For example, the staff nurses were not ready to accept the monitoring of the nursing students' activities as a part of their duties. In addition, in many cases knowledge and skills of qualified staff were not up-to-date. If they were in situation that could do the tasks of nursing teachers, they could help the tutors and therefore many of the problems in nursing education (particularly supervision and assessment of the students in clinical areas) could be resolved. When staff nurses perform an educational role, the educational needs of the students could be fulfilled instantly and also the assessment of them could be more accurate. Hence, in the professions such as nursing in that a part of the students' education based on apprenticeship, competency of the clinical areas including the physical equipment and specially skilled nurses, are important influences in the quality of nursing education.

On the other hand, many of the present staff nurses whose professional behaviours are a source of students' learning are the product of those curriculum which have had some shortcomings. As a result, it could be concluded that the educational needs of both of nursing students and nursing staff should be taken into account in any revision of the nursing programme. The objectives of a new policy for nursing education can be divided into two categories:

- **Graduate Programme** which could be implemented by:
 - founding in-service courses for further education of graduated nurses and improvement of their knowledge,
 - generating positive motivation toward continuous study,
 - producing recruitment competition;
- **Undergraduate Programme** which could be implemented by:
 - changes to the existing curriculum,
 - decrease in student nurses' intake in faculties that are viewed with problems,
 - promotion of quality of nursing education in each faculty;
 - increase in nursing student intake among the local candidate in order to train them focusing on the local health needs.

11.2 Graduate Programme (Continuing Education in Nursing): The main aim of this programme is maintaining the knowledge of the graduate nurses at the standard level. By raising the quality of the services of staff nurses for both the patients and also supervision of nursing students, many difficulties related to the number of the qualified tutors will be diminished. The deficiency of nurse tutors is the source of two major problems in the current curriculum: teaching methods in clinical areas and also the students' assessment. In the following, there are some points that are recommended for continuing education:

- Participation of all nurses in continuing education programme is necessary. This is based on the philosophy that nursing education is an ongoing, life-long process, which does not cease on qualifying as a nurse. Nurses should be continually learning and keeping their knowledge up-to-date as professionals. Indeed, clinical staff should supervise the students, hence they should demand educational and updating sessions in order to meet the learning needs of the students

instantly.

- The necessary hours of continuing education which nurses would attend will vary in different fields of nursing, length of time since their graduation and also specialties of nurses. For instance, nursing knowledge of nurses who have graduated recently is different from nurses who are working for a long time who probably did not take any refreshing course in nursing. However, according to the field of work, it seems that each nurse should have 20-45 hours refreshing course minimum every 2-3 years (Chitty, 1993).
- Ideas for courses would be generated by the nursing lecturers, nurse managers and practicing nurses in each field and its material should be provided by the departments of continuing education in nursing faculties.
- To guarantee promotion and maintenance of the level of the nurses' knowledge, it seems that establishment of a council for Examinations' Board could be useful. It would be more effective if validity of the nurses' license would depend on the passing the national exams. To obtain the best results, examination could be accomplished gradually that means for the first time, the exams should be regarded as a credit for promotion and then the exams would be compulsory by laps of time.

11.3 Undergraduate Programme (Existing Curriculum):

"In the future, more than ever, nurses will need a broad-based education, assertiveness skills, technical competence, and the ability to deal with rapid changes. All educational programmes must continue to modify their curricula to include changes in the

theoretical and technical data base for nursing."

(Leddy and Pepper, 1989, p.412)

Arising from the study, a number of critical issues are recommended to be taken into account, some in short term, others after further consideration. The most important issue that should be considered in planning the nursing curriculum in future would be as follows:

- The characters of the population should be considered in planning of details in each course. The hierarchy of Iran's population shows that one-third of the population are very young (under 20). On the other hand, just 3.5% of the population are at age 65 and over (Iran Statistical Yearbook, 1995). This means that the curriculum developer group must attend the significance of health and reproductive problems (ecological, industrial, epidemiological, and ageing-related diseases) that each part of the population will confront them in the future.
- Another important factor that should be noted in planning is a global trend to move toward urbanization. At present time, 58.5% of 60,000,000 Iran's population is living in urban areas (Iran Statistical Yearbook, 1995). According to the rate of the population growth in recent ten years (between 3.9% and 1.8%) the young population will be doubled each twenty years and that means by year 2015, the population will be 120,000,000 and most of them will live in urban areas (op cit). This will lead to increased density in residential and social interaction patterns and changing needs for health care at a rate much more rapid than the rate at which health services have been modified or established.
- Increasing specialization in the health fields also should be a concern. With the rapid expansion of knowledge and development of sophisticated skills for practice, the professional will find it increasingly difficult to maintain his/her competence and level of expertise.

Preparation of future nurses is necessary to cope the tasks of caring the patients with transplantation, chronic illnesses, etc.

The following guidelines are recommended to promote the quality of the current nursing curriculum. Most of the recommendations are related to the general policy of nurse education in Iran and are derived from the interviews' results (see Chapter Nine for more details).

- Elimination of repeated, useless and too detailed special subjects which have not any implication in nursing;
- Consideration of nursing implications of the basic sciences in each course by coordination of head of different educational departments and then to rewrite syllabus as a detailed document instead of existing vague statements;
- Entrusting more power to local authorities in nursing education to regulate time table of apprenticeship as a consequence of limitation in specialty beds in provinces' teaching hospitals;
- Improvement of interdisciplinary cooperation especially for the clinical fields by regular meeting of the nursing services' and nursing educations' authorities.
- Choosing nursing students among the interested persons (by interview);
- Choosing the students among the local candidates, so they would be more familiar with the ecology of the environment, endemic diseases, culture and customs of the clients;
- Choosing student nurses in their middle or late twenties could influence on the student's wastage (the rate of student's wastage in the U.S.A. is less than the U.K. as Quinn (1980) cited. This point could be attend and investigate in Iran).

In addition to the general mentioned issues, proposed changes of each particular parts of the curriculum are recommended as follows:

GOAL

Most of the interviewees stated that the goal of the courses in their educational group is very general. They expressed that as the clarification of the aim of the courses is entrusted to the lecturers, the assessment of teaching quality by the head of departments is difficult. Therefore, the objectives in each course should be defined in more detail by the curriculum developers (in terms of behavioural objectives for psychomotor skills). Aim of the life and social science courses relating to nursing and especially their relationships with the nursing courses should be explained clearly.

CONTENT

Recommendations based on the opinions expressed by the heads of different nursing departments which were gained through interviews are as follow:

Health Nursing: With regard to the importance of health education in strategy of the World Health Organisation (W.H.O.), "Health For All at 2000", this course needs some changes, but it should be considered that:

"Health promotion is not a cheap or easy 'solution' to current problems in health care. Achieving its aims and fulfilling its principles will require hard cash, extensive education and training programmes, shifts in organisational and professional responsibilities, a high level of management skill and, above all, the

political will to retain sight of longer-term goals."

(Gott and O'brein, 1990, p.24)

- The first task should be to make some modifications in the therapeutic aspects of the current programme and change it to a programme in which priority would be to promote health and prevent disease. To prepare nursing students for collaboration with the World Health Organisation strategies, the content of this course should be expanded in a way that the basic requirement of the programme "Health for all by 2000" be performable by the students (future nurses) in all places of Iran and by the minimum facilities. The importance of eradication of the major infantile communicable diseases (Measles, Poliomyelitis, Whooping cough, etc.) or other fatal diseases (Malaria, Tuberculosis, etc.) and their effects on the health of society should be emphasized.

Nursing Management: the interviewee in this educational group described some discordance between practices which has derived from some English language textbooks and practices in the hospital wards. For instance, use of computer for nursing plan currently is not applicable in most of the teaching hospitals.

- Teaching of the latest skills in management particularly the application of computer in nursing plan is necessary for nurses. The programme must note that the practices should be adapted taking into consideration the facility of the wards.

Mother and Child Health Nursing: this course is one of the most important courses which could affect the future of health in the society. Hence, many considerations should continuously be taken into account in order to improve the content of this course.

- Courses of newborn babies and genetic disorders which are too brief now should be expanded more. In contrast, it is not necessary to explain

all kinds of problematic deliveries, anaesthesia, and caesarean sections in detail, and they should be modified.

- There is nowadays an increasingly understanding that the skills of physical examination are very important for nurses in order to assess the health situation. Most of the signs of disorders relating to pregnancy could be revealed by simple physical tests. Therefore, those skills which are related prenatal and post-natal periods are necessary.

Medical-Surgical Nursing: indeed most of the courses of nursing education in B.Sc. degree are relevant to the Medical-Surgical Nursing. Although the physical dimension of human beings is common across the world, their environmental situations (ecological, geographical) and pattern of their living activities (nutrition, reproduction, sleeping, etc.) are different. Therefore, nursing curriculum of developed countries cannot be transported, without modification, to developing countries. This point should be considered in planning of nursing curriculum.

- It would be better if chronic diseases, which are taught in too much detail now, be inserted as a concept in the introduction to the Medical-Surgical Nursing. Instead, infectious diseases which are very important part of health problems in our society be introduced in a more details and as an independent 2-3 units.
- Every course of nursing should be community-centered. Even Medical-Surgical nursing is not something restricted to hospital and hospitalized patients.
- Similar to the Mother and Child Health nursing, physical examination skill is a very important part of the health assessment of different systems and organs in Medical-Surgical Nursing. Although teaching of all necessary skills of the assessment takes long time, it seems that a three-unit course of physical examination made up of two units theory and one unit

practice would be useful.

- At present, various nursing models of care are taught at the M.Sc. level of nursing education. However, most of the nursing services are given by the B.Sc. degree holders. In order to provide a better patient care, undergraduate student nurses should become familiar with different models of care with emphasis on the application of theory to practice. So, a two-unit course about the different nursing models of care with reference to the most appropriate models for each course is recommended. This appropriateness would be determined for each course by the curriculum development group in nursing faculties.

Paediatric Nursing: one-third of the population in Iran are children and teenagers (Iran Statistical Yearbook, 1995). Health needs of this group of clients should be met carefully. They will form the productive group of the country in future, so every investment on their health is cost effective.

- As the interviewee in this department described, introduced textbook for paediatric nursing has a medical theme rather than nursing. It is recommended that the application of the nursing procedures should be more emphasized.
- Similar to Mother and Child Health Nursing and also Medical-Surgical Nursing, physical examination play a significant role in presentation of Paediatric Nursing services. A two-unit course of physical examination is recommended in order to apply screen tests and distinguish the irregular conditions of babies.

Psychiatric Nursing: The interview and also the results of the questionnaires showed no discernable criticism in content of psychiatric nursing and approximately all of the involved teaching staff were satisfied with the content of the Psychiatric Nursing.

The Life and Social Science courses related to Nursing:
 There is an increasing need in computer technology to make an greater impact on discovery, communication, and storage of information. An introduction to computer with reference to its application in nursing is suggested at a minimum of two units.

METHODOLOGY

Consequences of an eight-year war, a lot of financial and man-power deficits occurred in the nursing education and the Government decided to increase the nursing student intake. This extra student intake generated some problems in nursing education especially in the availability of resources that could be described as disproportionate of those students and facilities such as: ratio of student/teaching staff; student/audio-visual aid; student/libraries facilities (textbooks, periodicals); choosing mostly lecture method of teaching by the lecturers (that is proper for a large group of students) and so on. These shortcomings could affect on the quality of education as Jolley and Brykczynska (1993) stated.

"Shortage of books and difficulty in gaining access to them could send messages to students that wide reading is not a valued part of education."

(Jolley and Brykczynska, 1993, p.98)

To eliminate these consequences, the Ministry of Health established new nursing faculties in all provinces. As a result, nursing student intake for each faculty has adjusted and therefore, many of the solutions can be performed. The following are some recommendations for promotion of methodology component of nursing curriculum in Iran:

- As the Head of Nursing Departments stated in the interview, most of the

students preferred an active role of the lecturers for teaching. This is compatible with the investigations of Burnard and Morrison (1992) and Cowman (1995) in which students preferred a teacher-centered approach of teaching strategy. On the other hand, the study of Gott (1982) indicated that the applied approaches of teaching depends on many important factors such as: the size of class, the audio-visual facilities, availability of the related textbooks and so on. Therefore, in order to modify the teaching-learning methods, it is necessary that the students to be convinced by acceptance of the responsibility of some parts of their learning. The negotiation between students and lecturers may decrease the lecture approach and increase the individualized and independent learning. In addition, it will:

- distribute the educational tasks of the lecturers among the lecturers, nursing staff of hospitals, and even students themselves;
 - promote the students' autonomy, because it is a helpful practice for nursing students' future responsibilities,
- Consequence of the confirmation of a student-centred approach of teaching/learning process a series of actions should be accomplished by nursing tutors particularly at wards level. These actions as requirements of a good environment of students' learning include: more attention to the significant influences of the head nurses and staff nurses on the individualized students' learning opportunities; primary familiarity with the equipment and technology that the students meet within a specific period of clinical experience; exploring the hidden curriculum, how they are communicated to the students, by whom and possibly when.
- Considering the deficiency in the number of librarians in nursing faculties (regarding the students' number), it seems that instead of the

recruitment of the skilled librarians that cannot be possible in many cases, the preparation of some leaflets and brochures can improve the quality of the services of the libraries. Those leaflets and brochures would contain the relevance information about structure of the library and where each shelves are located, different systems of coding the books, how to find a book from the shelves, how to borrow the books, and so on. This information should be presented in the first term of course by a tour of the library of each faculty. In addition, increase of the working hours of those libraries, from eight hours daily to twelve hours, could be very helpful for all students particularly the postgraduate students. Short-term courses of librarianship should be also provided for the staff of those libraries. In case of improvement of nursing faculties' financial situation, the libraries can access to:

- the online computerized databases (e.g. *MEDLINE*);
- subscription of more periodicals, order for textbooks;
- computerized search services (according to subjects, authors).

The accomplishment of the above mentioned recommendations will reduce the need of programme to the services of skilled staff in the libraries and therefore, it can be cost effective.

EVALUATION

Both of formative and summative evaluation of the interventions in each components of the nursing curriculum are necessary. The assessment of students by different approaches (examination, presentation of paper, observation at the wards, use of performance indicators, etc.) and in different times could be more fair. As the Head of Nursing Departments stated in the interview, the lack of comprehensive assessment tool for evaluation of the students' progress was the common complaint of the

lecturers and tutors. It is recommended that a council of the nursing lecturers and tutors to develop and valid different assessment tools by reviewing the literature and according to the varied field of practice. Those assessment tools should be prepared in such a way that in addition to consider the aim, content, and methodology of the nursing curriculum, it could be flexible to include the students' individual differences and special conditions in education.

11.4 Further investigation: in this study, some of the results are based on students' retrospective reports of their educational experiences. This, of course, presents a number of problems for interpreting the data. Are the students at the end of their education competent to evaluate the objectives? The answer is "yes" from the point of view that they are more familiar with their own experience during the education than other observers. It is, however, probable that the students' answers mainly reflect their experience in the last courses in the curriculum, since the period of education is long. This problem would be addressed with the inclusion of multiple assessments throughout the course of education so that aggregated measures could be derived for student variables. In order to provide data which will complete the process of this study, the researcher suggests that some scrutinies will be followed-up.

- As it was mentioned earlier, in revision of this curriculum the determination of syllabuses of the life and social science courses relating to nursing is a first priority. The comparison of viewpoints of the lecturers on the life and social science courses relating to nursing with the students' point of view about those courses may help as an indicator for success of the programme.
- In this study, evaluation component of the curriculum gained the lowest

score from the students' viewpoint. In addition, most of the interviewees stated that in contrast to the lecturers, the students preferred a teacher-centred approach of teaching. According to the study of Read (1979) on students' perception of teaching performance, effects of three factors: teacher, course and individual student were highly significant. The Read's (1979) study indicated that the effect of course was by far the most prominent and the effect of student group was more important than the effect of the instructor. The inquiry suggested cross-classified data to enable the separation of these effects. Considering the lack of such discrimination in the existing study, it is recommended that the students' preferences of teaching strategy, important factors and their effects on their perceptions to be identified. Then the results be compared with the lecturers' preferences about teaching methods of nursing courses of the curriculum.

- Some of the life and social science courses relating to nursing are made up of two subjects. These courses are "Nutrition" which is a combination of regular and therapeutic nutrition, "Microbiology" which is accompanied by "Fungiology", and so on. In this research it was not clear that which subjects were focused by the students in responding to the items of the questionnaire. It is recommended that a more deep scrutiny is necessary for the such courses in the future.

11•5 Summary: the participants of this study stated that there were some deficiencies in the national nursing curriculum in Iran. The chapter clarified that every struggle in the way of revising the curriculum should have two aspects, amending the current curriculum and planning continuing education. According to the shortcomings of the curriculum and as the respondents identified (particularly the Head of Nursing

Departments in interviews), some points which would lead to raising up the quality of nursing services were recommended in terms of undergraduate and graduate programmes. At the end, to complete this study, some offers were recommended in terms of further investigation.

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APPENDICES

A1- Measures Taken During the Fieldwork There is not a real border between several stages that had been conducted for the field work. However, the main activities of the process of data collection involved five stages.

1.1 Official stage: the first step of the study was related to the official stage and accomplished in U.K. as follow:

- authorising by The Higher Degree Committee of the Faculty of Art;
- introducing by the supervisor to The Ministry of Health in Iran, The Students' Affair Branch.

The rest of the work took time over 15 weeks from mid-April until end of July, 1993. The following operations had been conducted in Iran in order to administer the pilot study, determine the validity and the reliability of the questionnaires, and then data collection of main study by questionnaire and interview.

1.2 The pilot study, determination of validity and reliability of the instrument:

- Translating the questionnaires to Persian language;
- Reproducing the lecturers' and the students' questionnaires;
- Asking the opinion of four lecturers and three students about the Content and Construction Validity of the questionnaires;
- Amending the questionnaires according to those viewpoints;
- Reproducing the improved questionnaires in thirty copies in order to determine the Reliability of the questionnaires (Test and then

Retest);

- Accomplishing the Test (12 lecturers and 15 students);
- Collecting the completed questionnaires of each parties and analyzing the data;
- Conducting the Retest two weeks after Test (by 12 lecturers and 15 students);
- Comparing the results of the Test and Retest in order to determine correlation coefficient of the primary and the secondary questionnaires, item analysis of the questions, omission of the items which they had high differences in each answering.

1.3 Determination of sample size for main study:

- Contacting with The Ministry of Health, Nursing Affair Branch in order to get the statistic of the nursing faculties, their address and also the number of their students and lecturers in each educational groups;
- Eliminating the name of the faculties which had no enrolled students for final examination from the list;
- Eliminating the name of the persons who had been participated in the Test and Retest from the list;
- Preparing the final questionnaires and reproducing them according to the number of the samples.

1.4 The main study, distribution of the final questionnaires:

- Sorting both kinds of the questionnaires out in appropriate numbers in order to be sent to the targeted faculties;
- Preparing the letters as guide direction for the dean of those faculties in the provinces in order to help them to distribute the lecturers' and the students' questionnaires in a right manner;

- Providing the necessary envelopes and stamps and writing the address of the targeted faculties of the provinces on the envelopes;
- Posting the provinces' questionnaires;
- Choosing the names of the samples who were teaching or studying in the capital's faculties through the table of the random numbers;
- Distributing personally, the questionnaires in the capital's faculties to all of the chosen samples;
- Collecting the completed questionnaires in the capital and receiving those of the provinces;
- Translating the results of the questionnaires to English language.

1.5 Administration of the interview:

- Getting appointments in order to interview with the heads of different departments in one of the nursing faculties in Tehran;
- Administering the interviews;
- Organizing the results of the interviews;
- Translating the results of the interviews to English language.

A2- The Questionnaires

(Guide directions for dean of target nursing faculties)

Dear Dean

The enclosed questionnaires are instruments of data gathering for a research on the nursing education in B.Sc. degree in Iran. These data form an important part of my dissertation on "**Evaluation of the nursing curriculum**". The instruments can provide the lecturers' and the students' viewpoints on the different components of the curriculum. In the big envelop, there are six lecturers' questionnaires and seven students' questionnaires. In order to increase the quality of the research and also to decrease the sampling errors, there are some suggestions that the researcher would be so grateful if you follow them.

- **The Lecturers' Questionnaires:** As you are aware, each nursing faculty has six educational groups. Please write the name of your lecturers on the pieces of paper and draw lots randomly. Just one person from each group could be chosen. Then, every respondent is requested to answer the questions related to the field of her/his teaching on the enclosed answer sheets.

- **The Students' Questionnaires:** The last term students who have passed all the theoretical and practical units successfully and have enrolled the final examinations for graduation should be chosen. In order to select them, the name of the all the eligible students are written on the pieces of paper and then seven names drawn lots randomly. You know that the courses of the nursing curriculum in B.Sc. degree are divided into the nursing courses and also the Life and Social Science courses

related to nursing. Hence, the selected students are requested to answer the questions on the all courses which are labeled the top of the enclosed answer sheets.

Please return the completed questionnaires to the address that is written on the enclosed return envelop until next one month (mid-July maximum). Thank you very much indeed for your cooperation.

Zohre Parsa Yekta

2.1 The Context of the Lecturers' Questionnaire

Curriculum Evaluation of Nursing Education (B.Sc.) in Iran

This study aims to collect nurse educators' view on the nursing curriculum at B. Sc. degree in Iran. It would be of great assistance to me if you complete the enclosed questionnaire. Your co-operation is vital for the success of this survey. All information given and opinions expressed in this questionnaire will be treated as strictly confidential.

Thank you very much for your co-operation.

Please answer all questions. Read each item carefully and indicate your response with a tick (✓) in the appropriate box.

Section one: Background Data

- | | |
|--|--|
| 1 - Your gender | <ul style="list-style-type: none"> ° Female ° Male |
| 2 - Your age group | <ul style="list-style-type: none"> ° Under 30 ° 30 - 39 ° 40 - 49 ° 50 & Up |
| 3 - Your academic qualifications | <ul style="list-style-type: none"> ° B.Sc. ° M.Sc. student ° M.Sc. ° Ph.D. student |
| 4 - If you are more than B.Sc. your major | <ul style="list-style-type: none"> ° Health Nursing ° M.C.H. Nursing ° Med.Surg. nursing |

- N. Management
- Paediatr Nursing
- Psychiatric Nursing

5 - Length of time since B.Sc graduating

- 5 - 9
- 10 - 14
- 15 - 19
- 20 - 24
- 25 & Up

6 - Length of time since M.Sc. graduating

- Under 5
- 5 - 9
- 10 - 14
- 15 & Up

7 - Clinical experience (years)

- Under 5
- 5 - 9
- 10 - 14
- 15 & Up

8 - Teaching experience (years)

- Under 5
- 5 - 9
- 10 - 14
- 15 - 19
- 20 - 24
- 25 & Up

9 - Your department

- Health Nursing
- M.C.H. Nursing
- Med-surg Nursing
- N. Management
- Psychiatric N.
- Paediatric N.

10 - Educational Responsibilities

- No Responsibility
- Head of department
- Educational Deputy

Section two:

Please choose from the following responses which best represents your feeling about each statement. Consider the following scale: SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree. Please circle one response for each item.

Intention & Purposes

1) The course philosophy indicates, in broad terms, how the students will be changed by the course with respect to individual and personal development, educational and professional development .

SD D U A SA

2) The major goals are clearly identified in your educational group.

SD D U A SA

3) The general objectives and intended outcomes are clearly identified.

SD D U A SA

4) The objectives are precise, feasible, appropriate and achievable.

SD D U A SA

5) The objectives cannot be attained in the time frame intended.

SD D U A SA

6) There are a logical relationship between the Life and Social Science courses related to nursing and the students' future professional responsibility.

SD D U A SA

7) The objectives are stated in behavioural terms.

SD D U A SA

8) Higher level cognitive objectives are included where appropriate.

SD D U A SA

9) If the materials teach psychomotor skills, the objectives are written in the psychomotor domain.

SD D U A SA

10) Affective objectives are not included a long with the cognitive and psychomotor objectives when affect is important.

SD D U A SA

Content

1) The content takes clear account of the needs of the students as potential nursing practitioners and future professional nurse.

SD D U A SA

2) The content of the nursing curriculum has not educational value, occupational utility and professional credibility.

SD D U A SA

3) The eclectically-derived subjects are sufficiently integrated into nursing practice applications.

SD D U A SA

4) The common-core curriculum does not focus on nursing as its dominant concern and an application to practice.

SD D U A SA

5) The content does not include major integrating and organisational themes, (the nursing process, health care maintenance, patient self-care teaching, holistic approaches) which can be used for focusing eclectic material into nursing contexts.

SD D U A SA

6) The nursing represented in the materials is consistent with a nursing model rather than a medical model.

SD D U A SA

7) The content is adequately sequenced and it has progressive continuity and logical development.

SD D U A SA

8) The materials are complete and up-to-date.

SD D U A SA

9) The broad range of nursing skills, which are necessary for nurse to acquire, are included.

SD D U A SA

10) There are not any readily discernable errors in the content.

SD D U A SA

Methodology

1) There are sufficient resources to enable students to achieve the goals.

SD D U A SA

2) The methods selected are seeking to bring theory and practice closer together.

SD D U A SA

3) There is an appropriate balance of individualised, collaborative, and group approaches for learning.

SD D U A SA

4) The teacher's role as a facilitator of learning is sufficiently identified and incorporated into the curriculum.

SD D U A SA

5) The operating mechanisms which will allow the transfer of teaching and learning into clinical settings in hospitals and the community are not

sufficiently clear and understood.

SD D U A SA

6) The diagrams and visuals in the media are accurate.

SD D U A SA

7) The materials do not provide an opportunity for students to apply the content or guidance for doing so at a later time.

SD D U A SA

8) Students are able to participate actively in the learning process.

SD D U A SA

9) The directions for using the materials and progressing through the instruction are easily understood, and they facilitate the use of the materials.

SD D U A SA

10) The materials do not provide the ways of individualizing the instruction according to the needs, interests, and preferences of the students.

SD D U A SA

Evaluation

1) The objectives are evaluated.

SD D U A SA

2) The attainment of each objective is evaluated by an explicit performance criterion.

SD D U A SA

3) Performance criteria are not congruent, complete, objective, reliable and efficient.

SD D U A SA

4) The strategies help you to be a more effective teacher.

SD	D	U	A	SA
----	---	---	---	----

5) The strategies help the students to become more effective learners.

SD	D	U	A	SA
----	---	---	---	----

6) There are not procedures for monitoring student progress through the instructional sequence.

SD	D	U	A	SA
----	---	---	---	----

7) The assessment are sufficiently well distributed over the span of the course.

SD	D	U	A	SA
----	---	---	---	----

8) The evaluation of student performance is only based on formative procedures.

SD	D	U	A	SA
----	---	---	---	----

9) There is a fair sampling of student ability over a wide range of course subjects and required skills.

SD	D	U	A	SA
----	---	---	---	----

10) There are evaluation procedures for use at the completion of the instruction.

SD	D	U	A	SA
----	---	---	---	----

2.2 The Context of the Students' Questionnaire

Curriculum Evaluation of Nursing Education (B Sc) in Iran

This study aims to collect nurse students' view on the nursing curriculum at B Sc. degree in Iran. It would be of great assistance to me if you complete the enclosed questionnaire. Your co-operation is vital for the success of this survey. All information given and opinions expressed in this questionnaire will be treated as strictly confidential.

Thank you very much for your co-operation.

Please answer all questions. Read each item carefully and indicate your response with a (√) in the appropriate box.

Section one: Background data

- 1 - Your age group

° 20 - 24

° 25 - 29

° 30 & Up
- 2 - Your gender

° Female

° Male
- 3 - Nursing experience before B.Sc.

° L.P.N

° Associate nurse

° No experience

Section two:

Please choose from the following responses which best represents your feeling about each statement. Consider the following scale: SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree. Please circle one response for each item. I will be so grateful if you answer each question for all courses which you have passed successfully so far.

1) The objectives can be attained in the time frame intended.

SD D U A SA

2) There are not logical relationship between the Life and Social Science courses and your future professional responsibility.

SD D U A SA

3) The objectives are not precise, feasible, appropriate and achievable.

SD D U A SA

4) The content takes clear account of the needs of the students as potential nursing practitioners and future professional nurses.

SD D U A SA

5) The broad range of nursing skills, which are necessary for a nurse to obtained, are not included.

SD D U A SA

6) The content is adequately sequenced and it has progressive continuity and logical development.

SD D U A SA

7) There are sufficient resources to enable students to achieve the goals.

SD D U A SA

8) The operating mechanisms, which allow the transfer of teaching and learning into clinical settings in hospitals and the community, are not sufficiently clear and understood.

SD D U A SA

9) Students are able to participate actively in the learning process.

SD D U A SA

10) Performance criteria of students are congruent, complete, objective, reliable and efficient.

SD D U A SA

11) There are procedures for monitoring student progress through the instructional sequence

SD D U A SA

12) There is a fair sampling of student ability over a wide range of course subjects and required skills.

SD D U A SA

A3- Demographic data of the respondents

Figure A1: Gender of the lecturers (n=71)

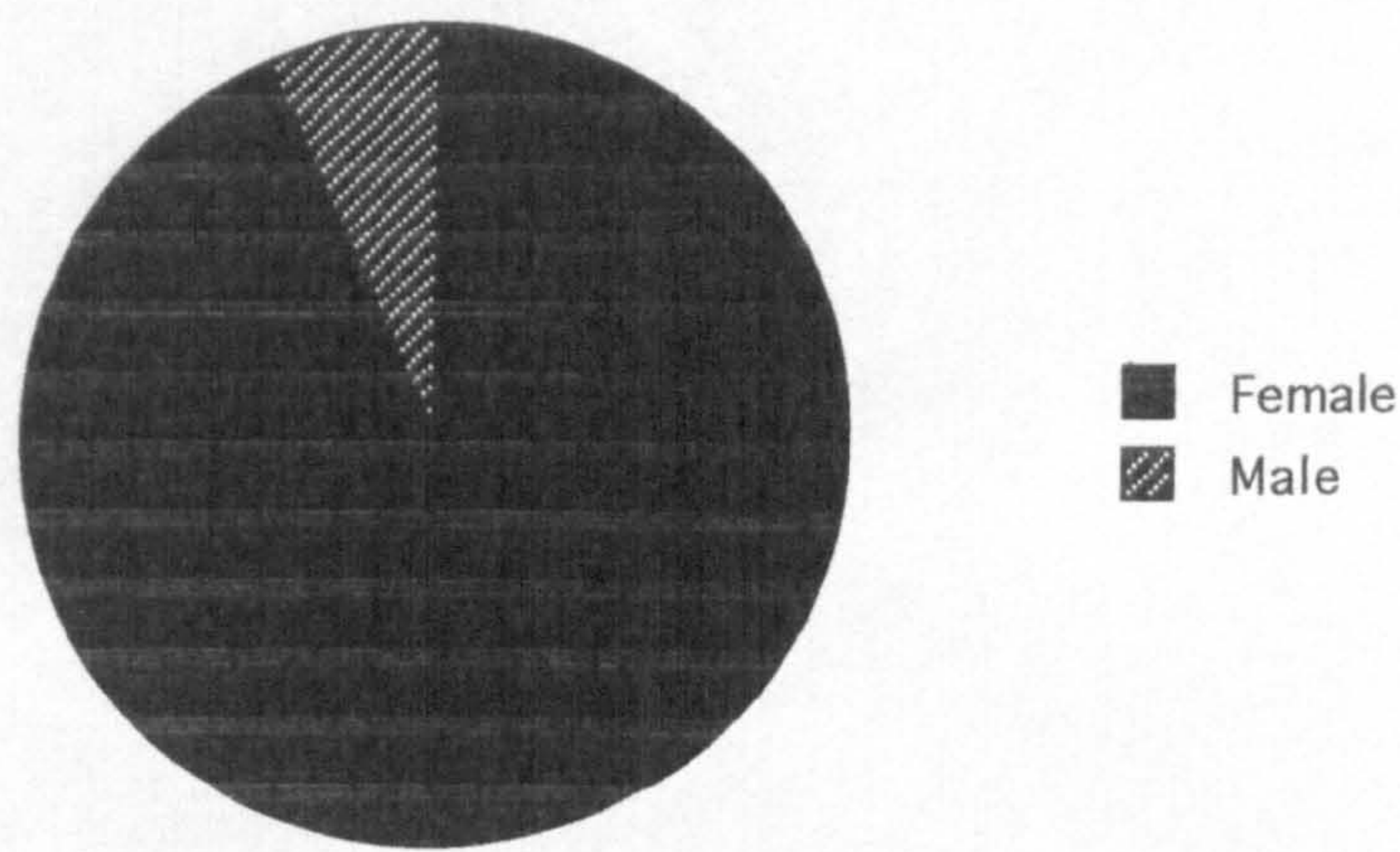


Figure A2: The lecturers' age groups (n=71)

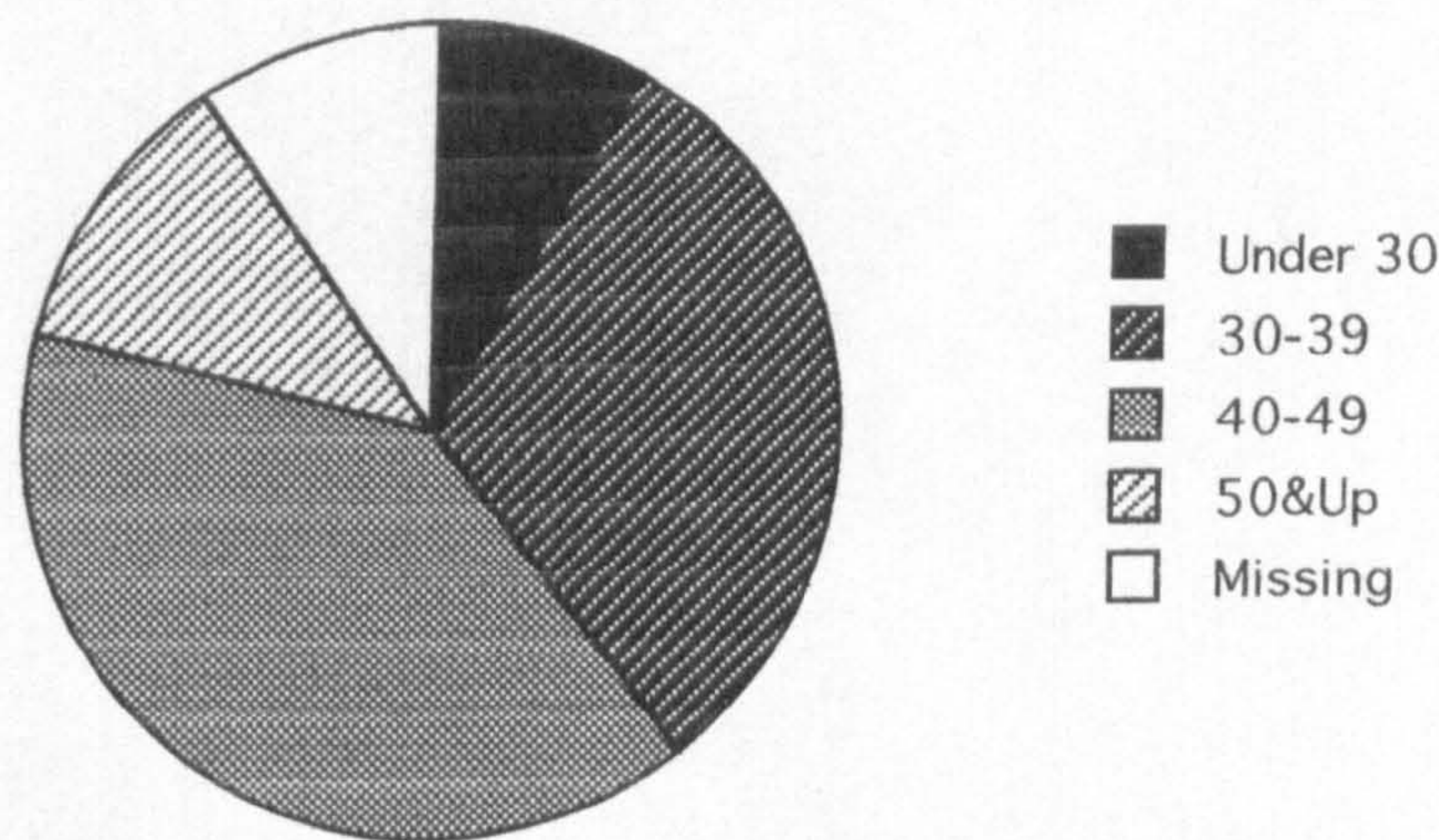


Figure A3: The lecturers' last educational degree (n=71)

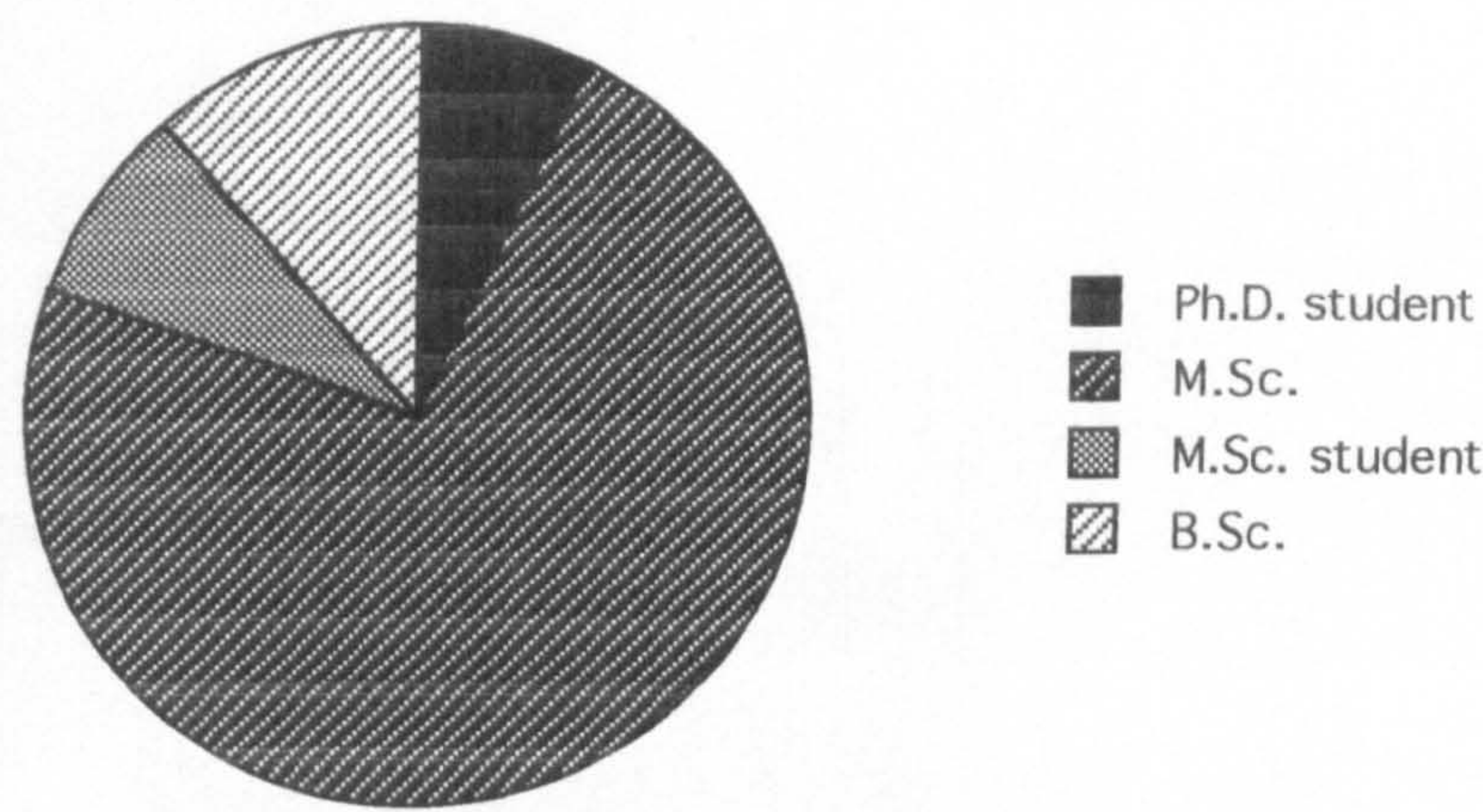


Figure A4: The lecturers' educational majors (n=71)

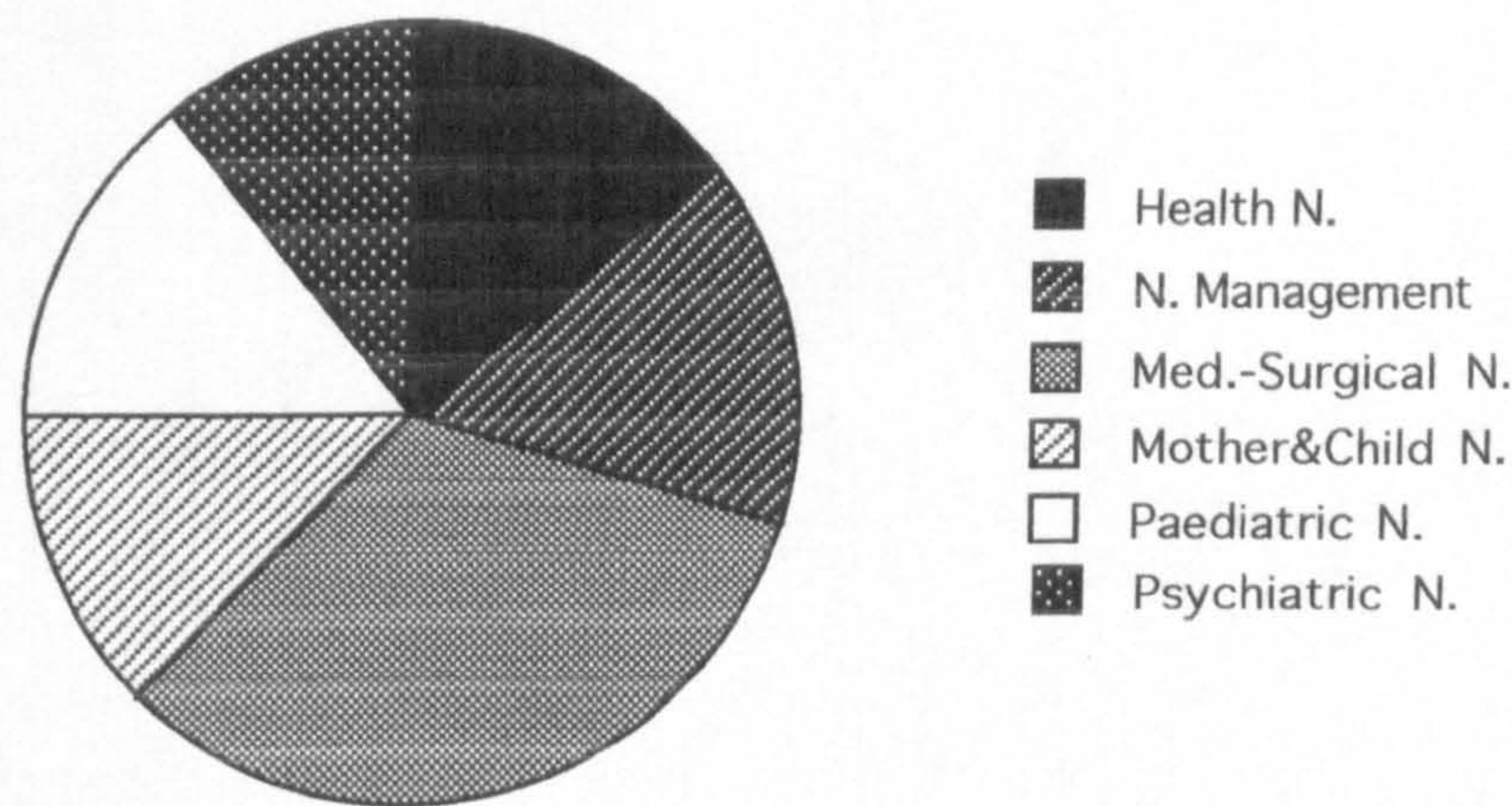


Figure A5: Length of time since B.Sc. graduation of the lecturers (n=71)

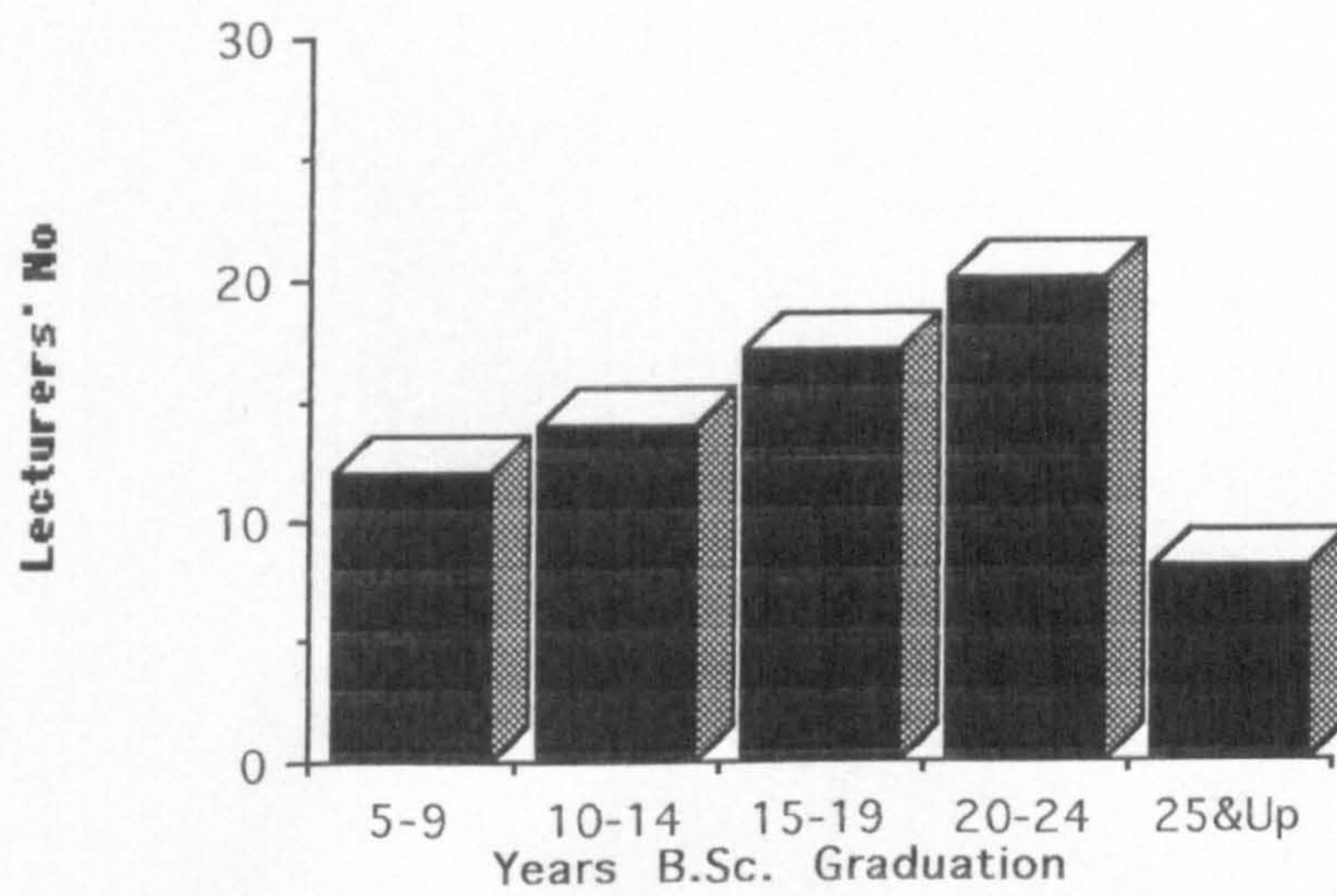


Figure A6: Length of time since M.Sc. graduation of the lecturers (n=71)

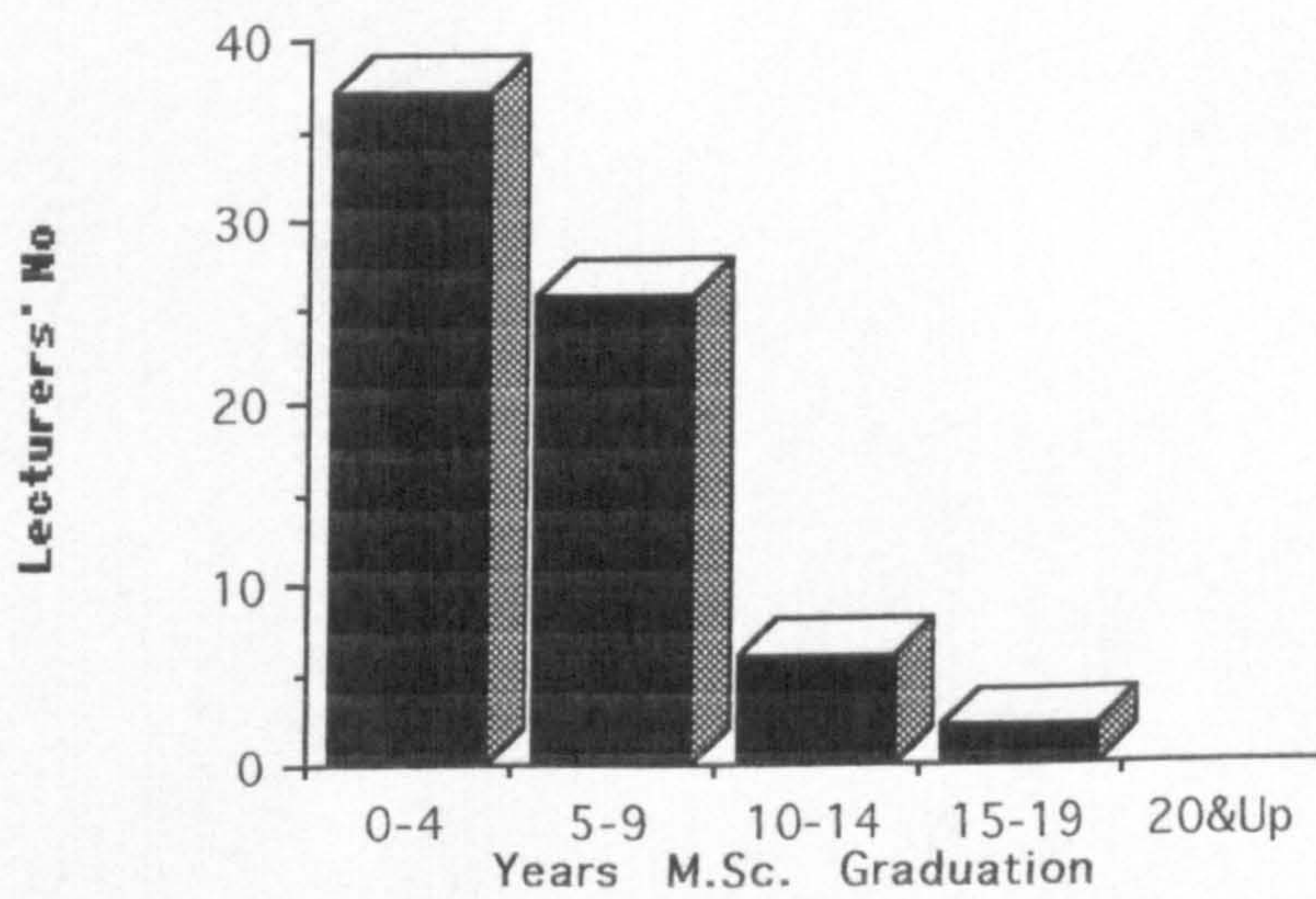


Figure A7: Length of lecturers' clinical experience (n=71)

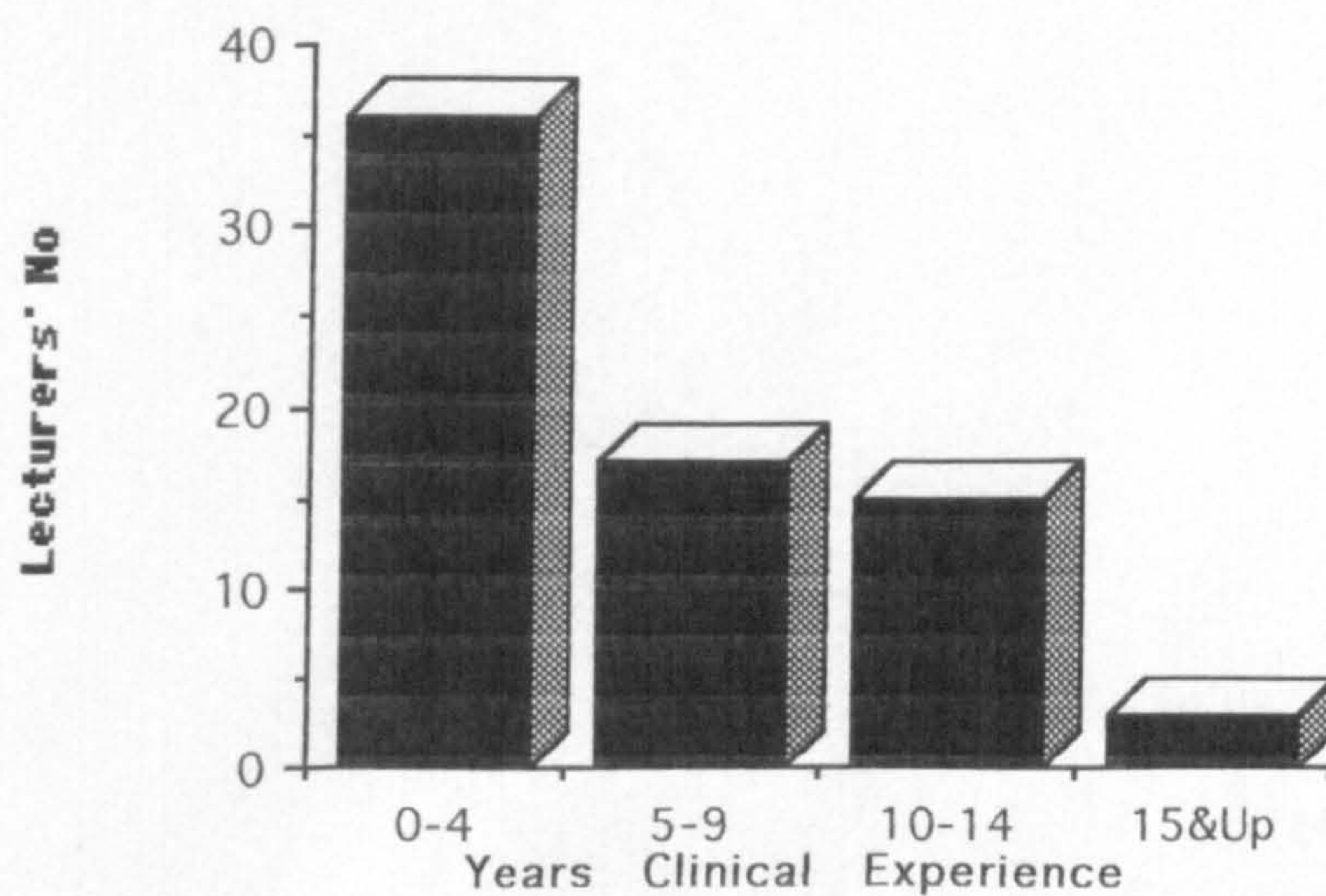


Figure A8: Length of teaching experience of the lecturers (n=71)

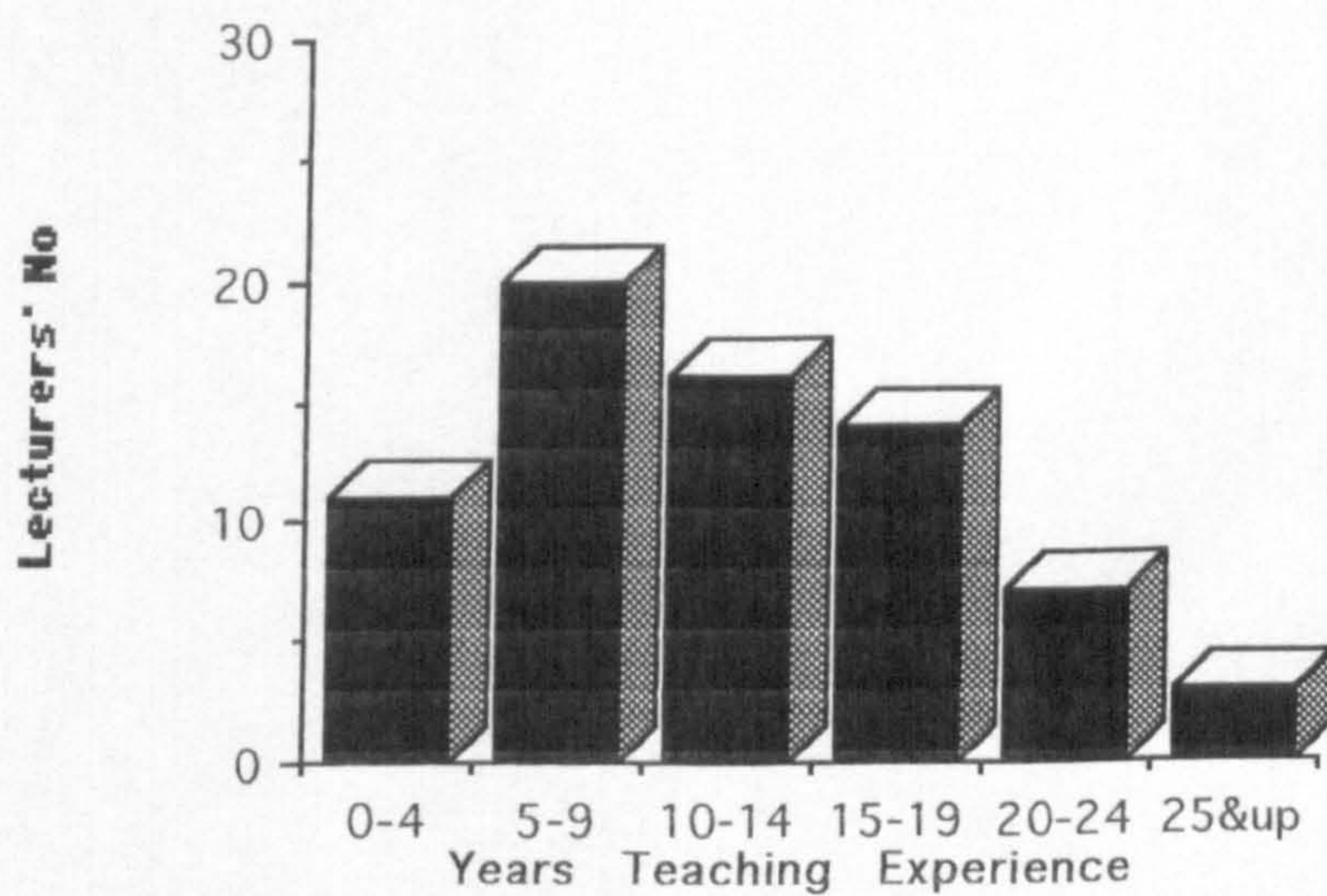


Figure A9: Educational responsibilities of the lecturers (n=71)

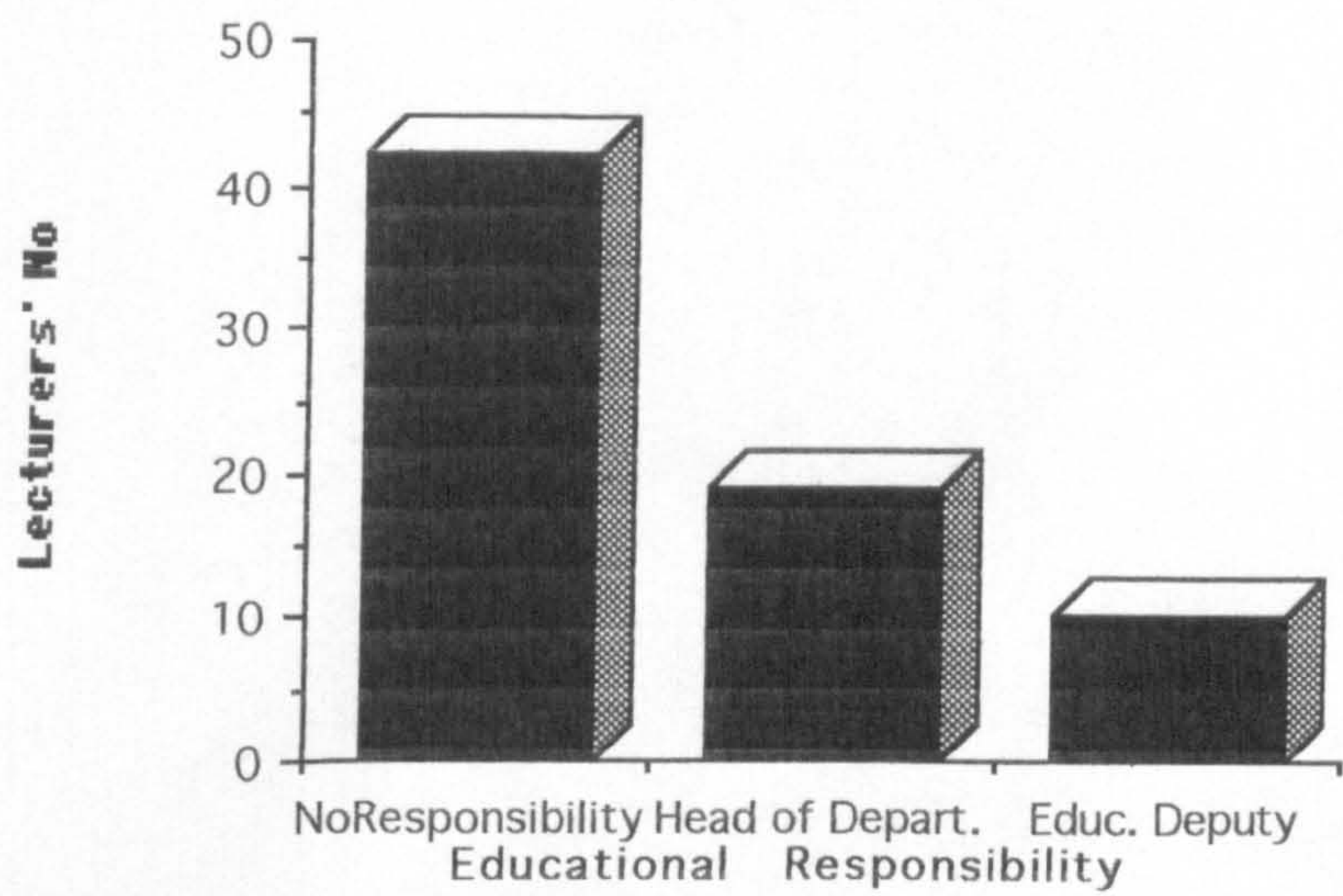


Figure A10: The students' age groups (n=136)

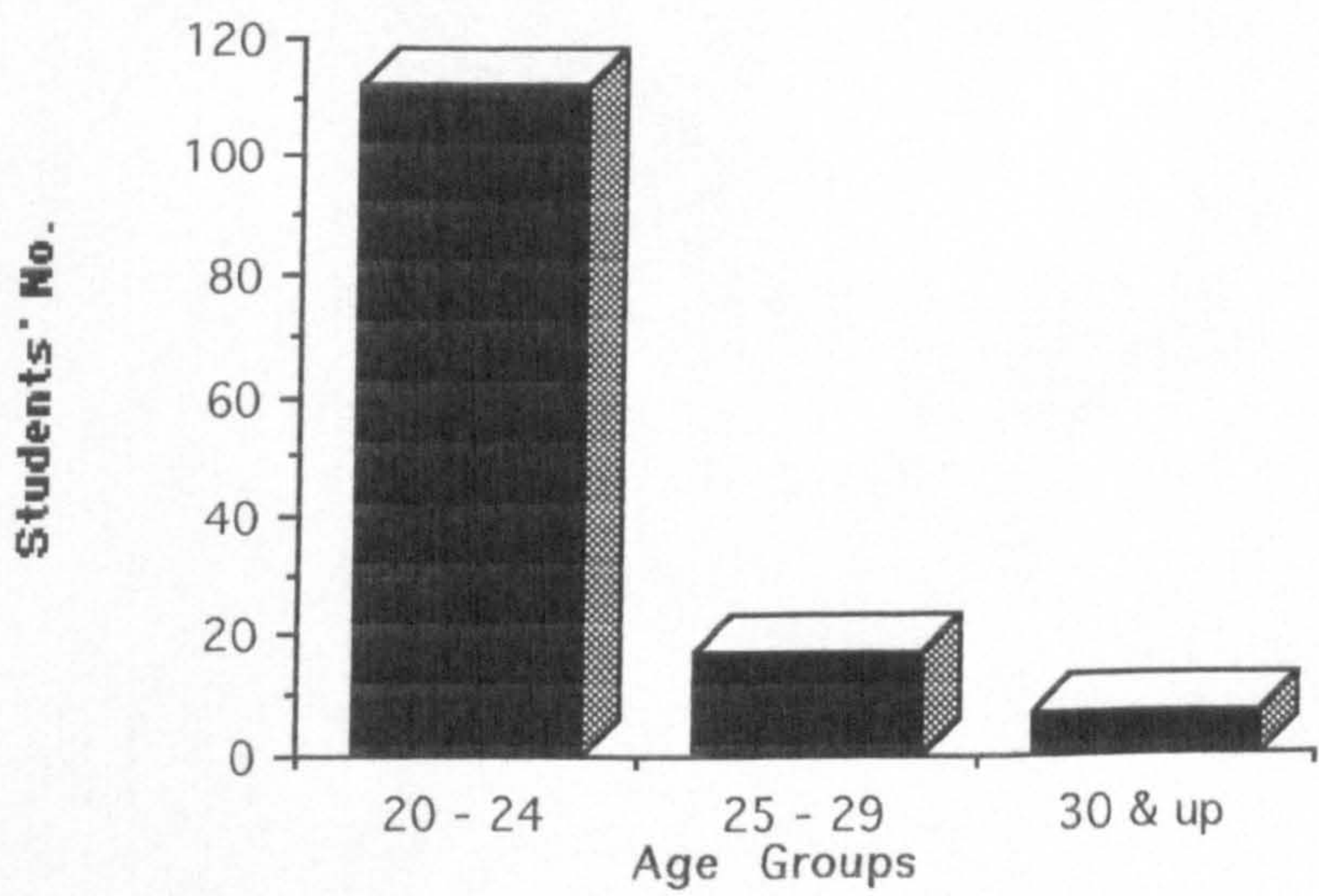


Figure A11: The students' gender (n=136)

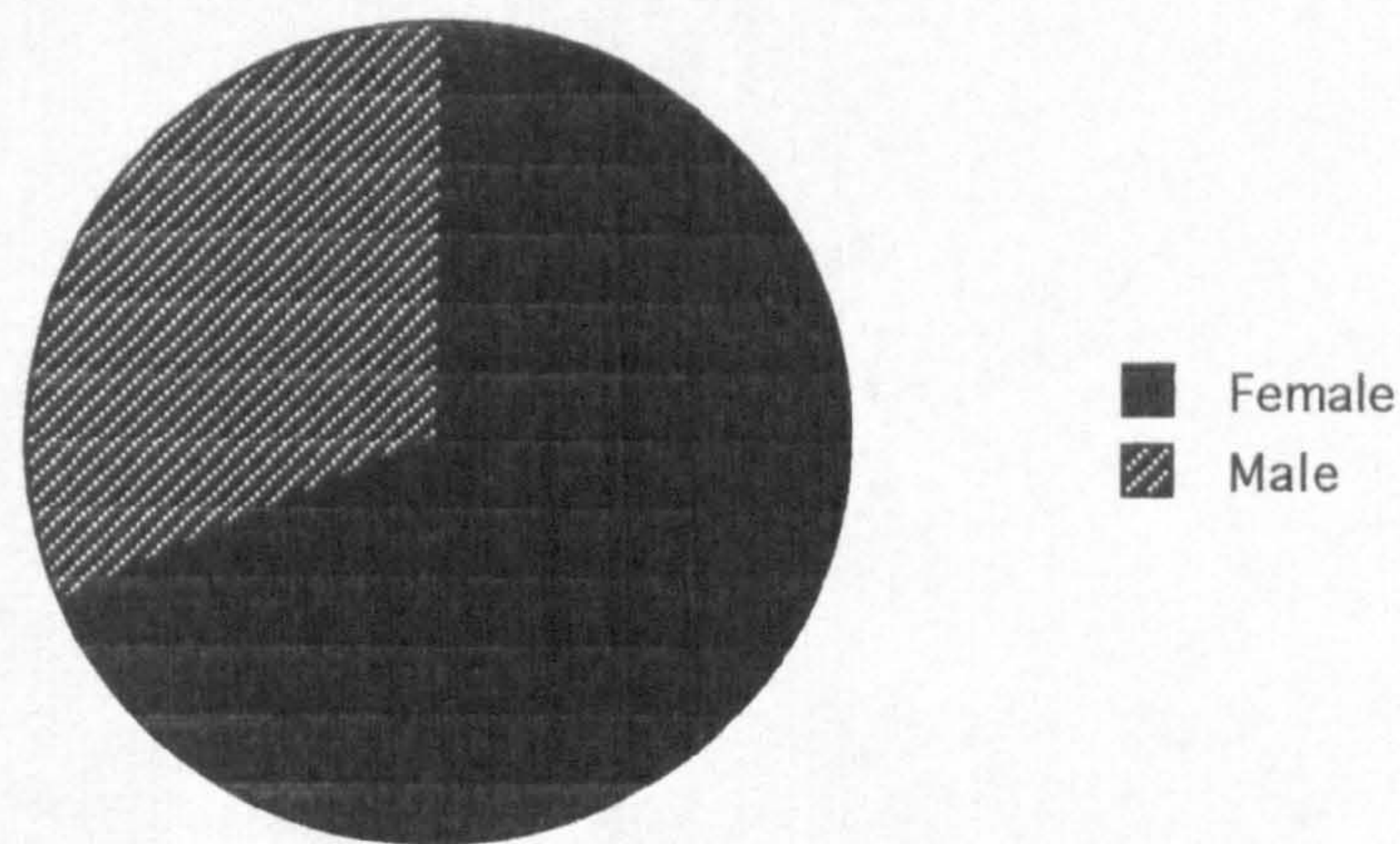


Figure A12: The students' nursing experience prior commencing the B.Sc. course (n=136)

